365

CONTENTS

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

TRADE NAME	MODEL	SET AND FOLDER No.
Airline	BR-4024A, BR-4124A Tel. Rec.	365-2
Allstate	6268, 6269 (Ch. 528.62680, 1, 528.62690, 1)	365-3
Chevrolet	987573	365-4
Firestone	4-A-164 (Code 297-6-582)	365-5
Ford	75BF (FEG-18805-B)	365-6
Hamilton	W-30	365-7
Harman Kardon	TA-120	365-8
Magnavox	Chassis AMP-153AA	365-9
Olympic	1CA70, U, 1CB71, U, 1CB72, U, 1CB77, U, 1KA80, U, 1KB87, U, 1KB88, U, 1TA60, U, 1TB61, U, 4CE75, U, 4CF75, U, 4CF76, U, 4KF84, U (Ch. DA, DAU, DB, DBU, DE, DEU, DF, DFU) Tel. Rec.	365-10
RCA Victor	7-HFR-1 (Ch. RC-1168, RS-161)	365-11
RCA Victor	7-TR-2, 7-TR-3 (Ch. RS-156, B, F) Recorder, Prod. Chg. Bul. 188	365-1
RCA Victor	9-ES-6H, J (Ch. RS-157B) Prod. Chg. Bul. 188	365-1
Sentinel	Chassis U73-01AA, U73-02AA, V73-01AA, V73-02AA Tel. Rec.	365-12
Silvertone	Chassis 567.40000, 1, 2, 3, 6, 9, 567.40100, 1, 2, 3, 5, 6, 8, 9, 567.41000, 1, 2, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 567.41100, 1, 2, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19 Record Changer	365-13
Stromberg-Carlson	AP428	365-14
Truetone	2D1730A, B, C, 2D1731A, 2D1732A Tel. Rec.	365-15
Zenith	Y2281E, EU, R, RU, U (Ch. 17Y22, U) Tel. Rec. Prod. Chg. Bul. 188	365-1

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 16 IN SET 340

RCA VICTOR MODELS 7-TR-2, 7-TR-3 (Ch. RS-156, B, F)

RCA Victor Models 7-TR-2 and 7-TR-3 (Ch. RS-156,B) were covered in Photofact Folder 16 – Set 340.

Model 7-TR-3 (Ch. RS-156F) is added, along with late production changes, with the publication of this bulletin.

Ch. RS-156, B

TO REDUCE HUM AT MAXIMUM VOLUME

C15 is increased from 22MMF to 82MMF.

R19 is decreased from 820K to 220K.

R20 is decreased from 68K to 18K.

C16 is increased from .0047MFD to .015MFD.

A 270K, ½ watt resistor, is added from the junction of R19 and R20 to the junction of C14 and C15.

A 100K, ½ watt resistor, is added from pin 7 of V2B to ground.

C13 is decreased from .047MFD to .01MFD.

LOCATION OF VOICE-MUSIC SWITCH CHANGED

M8, voice-music switch, is removed from the input circuit of V2B (AF Amp.) and relocated in the grid circuit of V3 (audio output). A partial schematic showing the new circuit is given in Fig. 1.

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

COMPONENT CHANGE

C14 is decreased from 820MMF to 470MMF.

Ch. RS-156F

LOCATION OF VOICE-MUSIC SWITCH CHANGED

M8, voice music switch is removed from the input circuit of V2B (AF Amp.) and relocated in the grid circuit of V3 (audio output). A partial schematic showing the new circuit is given in Fig. 2.

ERASE HEAD ADJUSTMENT

Chassis RS-156F uses AC erase voltage at 40 volts AC, approximately (45KC), applied to the erase coil of the head. Trimmer (M9) bias level trimmer, is used to adjust the the level of the erase voltage and recording bias.

(Con't on the reverse side)

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 15 IN SET 351

RCA VICTOR MODELS 9-ES-6H, 9-ES-6J (Ch. RS-157B)

RCA Victor Models 6-ES-5, 7-ES-6H, 7-ES-6J (Ch. RS-157, A) were covered in Photofact Folder 15 - Set 351.

Models 9-ES-6H and 9-ES-6J (Ch. RS-157B) are electrically identical to the models covered except for the following change.

NEW AF AMPLIFIER TUBE

V1, AF amplifier, is changed from a 12SQ7 to a 12AV6. A partial schematic showing the new circuit is given on the reverse side.

PRODUCTION CHANGES
BULLETIN 188

PRODUCTION CHANGES
BULLETIN 188

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

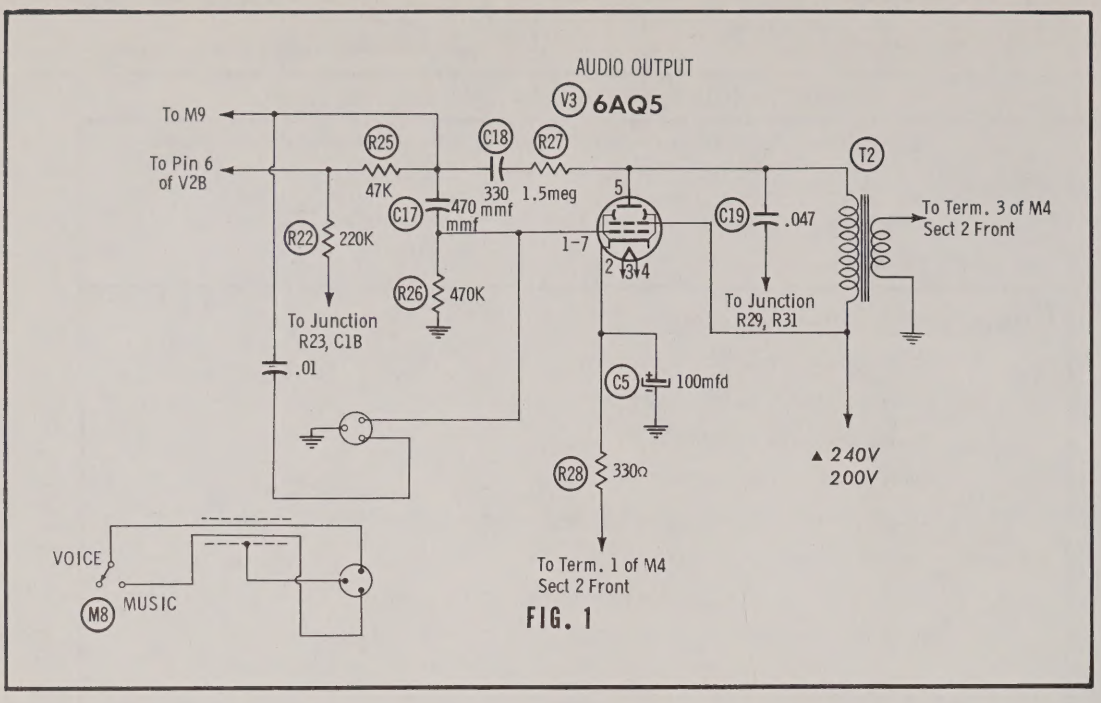

AUDIO OUTPUT
V3 6AQ5
To M9
To Pin 6 of V2B
R25 47K
C18 330
R27 1.5meg
T2
C17 470 mmf
R22 220K
R26 470K
1-7
2 3 4
C19 .047
To Term. 3 of M4 Sect 2 Front
To Junction R23, C1B
.01
To Junction R29, R31
C5 100mfd
▲ 240V 200V
R28 330Ω
VOICE
M8
MUSIC
To Term. 1 of M4 Sect 2 Front

FIG. 1

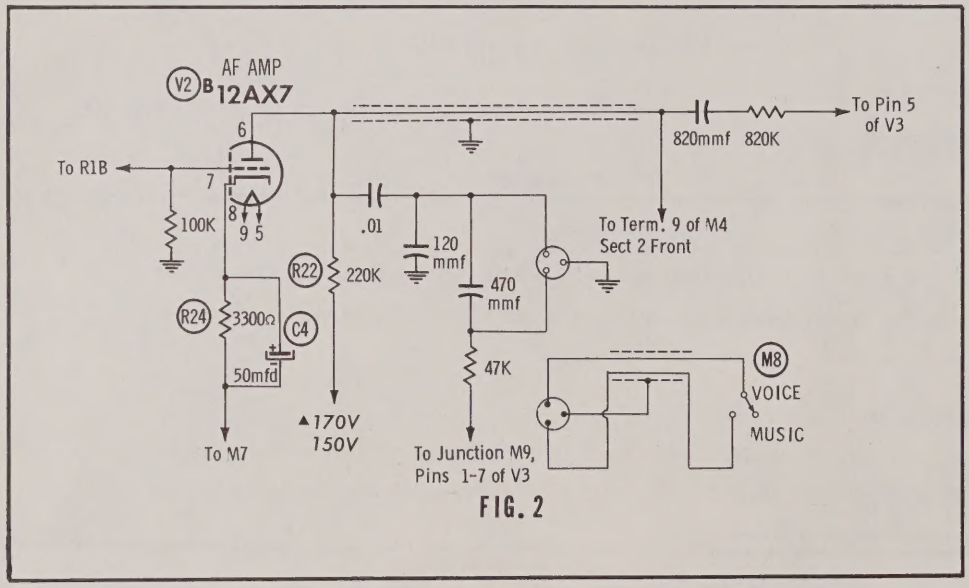
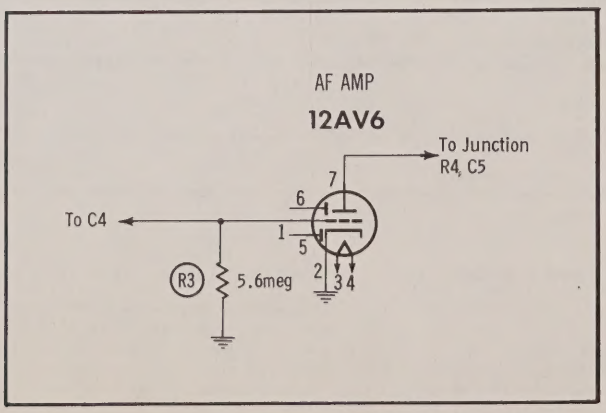

AF AMP
V2B 12AX7
To R1B
6
7
8
9
5
100K
.01
820mmf
820K
To Pin 5 of V3
To Term. 9 of M4 Sect 2 Front
R22 220K
120 mmf
470 mmf
R24 3300Ω
C4 50mfd
47K
M8
VOICE
MUSIC
▲170V 150V
To M7
To Junction M9, Pins 1-7 of V3

FIG. 2


AF AMP
12AV6
To Junction R4, C5
7
6
1
5
2
3 4
To C4
R3 5.6meg

SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 19 IN SET 335

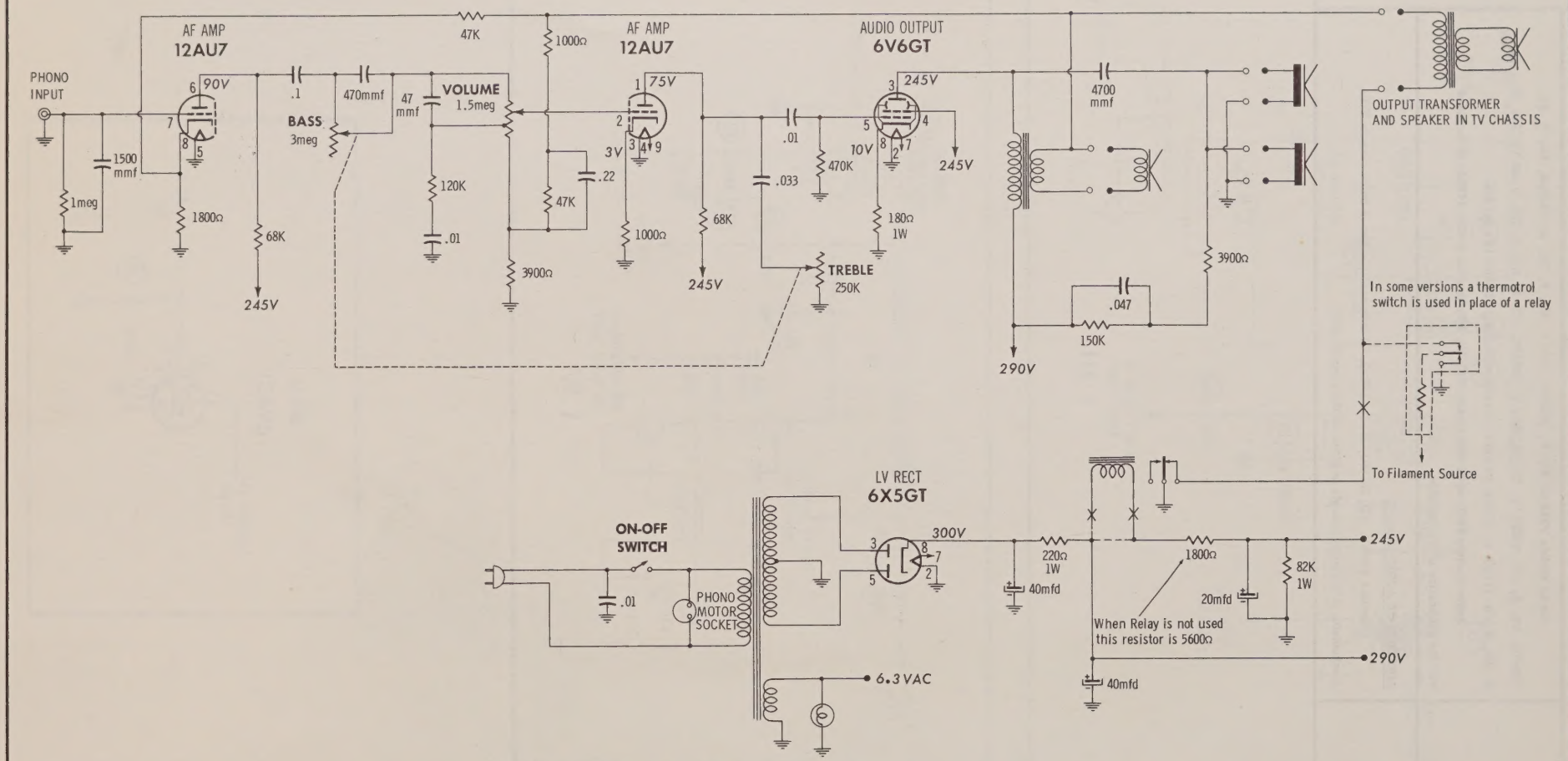
ZENITH AUDIO CHASSIS 3Y01

Zenith Models Y2220R, RU, U, Y2222C, CU, E, EU, Y, YU, U, Y2232E, EU, R, RU, Y2247E, EU, R, RU, Y2250, E, EU, R, RU, U, Y2258E, EU, H, HU, R, RU, U and Y2281E, EU, R, RU, U (Ch. 17Y20, U, 17Y22, U) were covered in Photofact Folder 19 - Set 335.

Audio Chassis 3Y01, used with models Y2281E, EU, R, RU, U (Ch. 17Y22, U) is added with the publication of this bulletin.

ADDITION OF AUDIO CHASSIS

Models Y2281E, EU, R, RU, U (Ch. 17Y22, U) may use an external audio chassis 3Y01. A schematic of the audio chassis is given on the reverse side.


PHONO INPUT
AF AMP
12AU7
90V
1500 mmf
1meg
1800Ω
.1
68K
245V
BASS
3meg
470mmf
47 mmf
VOLUME
1.5meg
120K
.01
47K
1000Ω
.22
3900Ω
47K
AF AMP
12AU7
75V
3V
1000Ω
68K
245V
.01
.033
470K
TREBLE
250K
AUDIO OUTPUT
6V6GT
245V
10V
180Ω
1W
245V
4700 mmf
3900Ω
.047
150K
290V
OUTPUT TRANSFORMER
AND SPEAKER IN TV CHASSIS
In some versions a thermotrol switch is used in place of a relay
To Filament Source
LV RECT
6X5GT
300V
ON-OFF
SWITCH
.01
PHONO
MOTOR
SOCKET
6.3 VAC
220Ω
1W
40mfd
1800Ω
20mfd
82K
1W
When Relay is not used this resistor is 5600Ω
40mfd
245V
290V

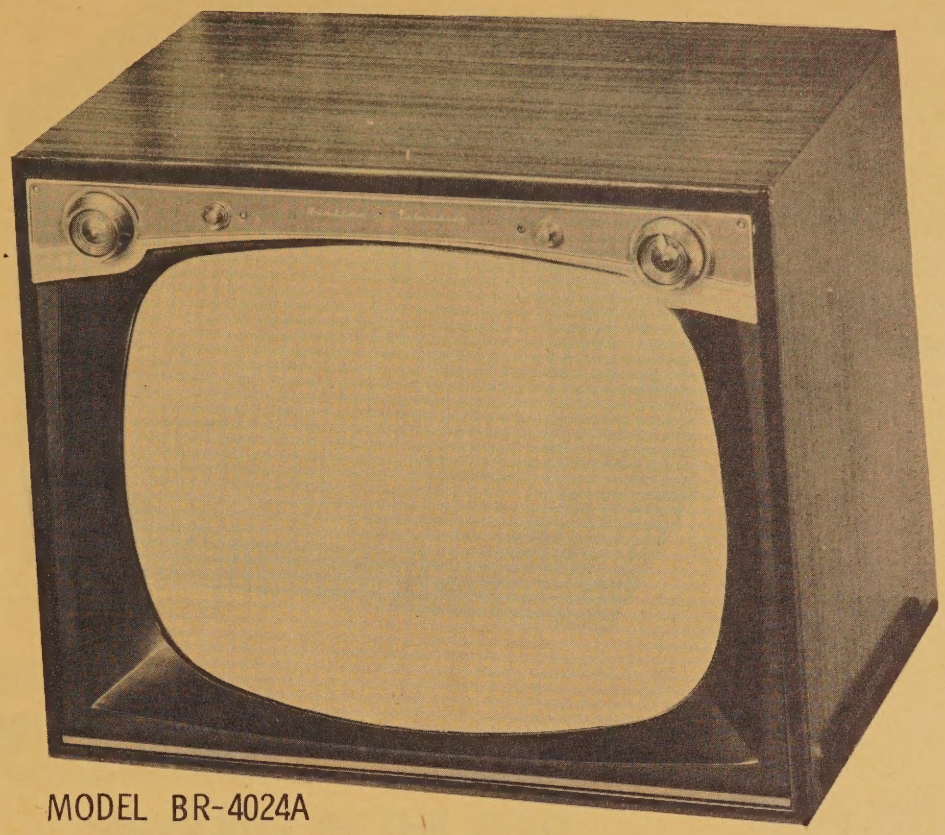
PHOTOFACT* Folder
*TRADE MARK

AIRLINE
MODELS BR-4024A, BR-4124A

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . unless it has been purchased as part of a complete volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



MODEL BR-4024A

AIRLINE
MODELS BR-4024A, BR-4124A

TRADE NAME	Airline Models BR-4024A, BR-4124A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Illinois
TYPE SET	Television Receiver
TUBES	Fifteen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING 175 Watts, 1.5 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 46.75MC, Sound IF 42.25MC (Intercarrier)

INDEX

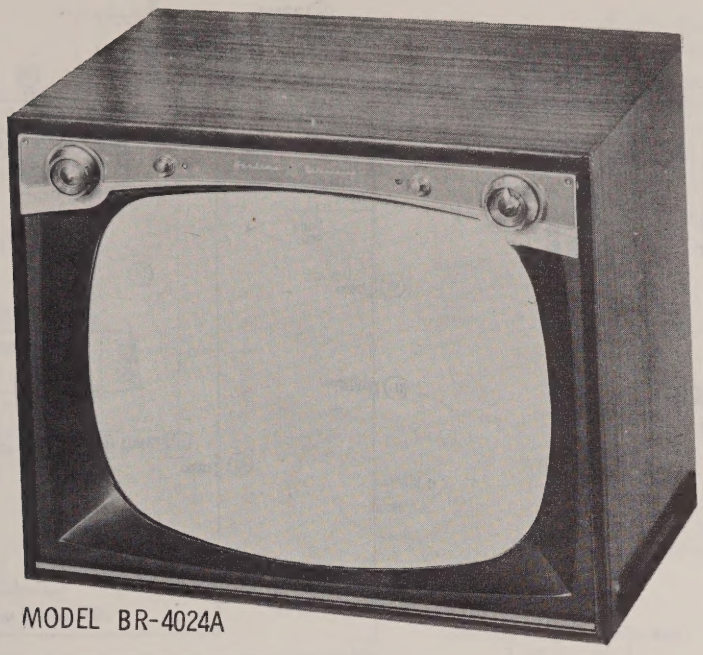
Alignment Instructions 6, 7
Disassembly Instructions 10
Horizontal Sweep Circuit Adjustments 16
Parts List and Descriptions 12, 13, 14
Photographs
Cabinet-Rear View 16
Capacitor & Alignment Identification 4, 9
RF Tuner 15
Photographs (Con't)
Resistor & Inductor Identification 5, 8
Resistance Measurements 10
Servicing in the Field 1
Schematic (Alternate Tuner) 11
Schematic (TV) 2
Tube Failure Check Chart 3
Tube Placement Chart 3

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

AIRLINE
MODELS BR-4024A, BR-4124A



MODEL BR-4024A

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

AIRLINE
MODELS BR-4024A, BR-4124A

CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS
Care should be exercised when connecting test equipment or physically contacting the chassis.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

1. Remove 7 push-on type control knobs from the front. NOTE: On power tuning models DO NOT attempt to remove on-off or channel buttons.
2. Remove 4 metal screws and the escutcheon.
3. Remove the metal screws and the safety glass clamps at the top.
4. Remove the safety glass.

FOCUS

The focus may be varied in steps by the position of a wire in the focus adjustment board. This requires a soldered connection. Readjust the Ion trap for the best focus consistent with maximum brightness.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

For adjustment of the horizontal oscillator, it is necessary to remove the rear cover and supply power to set. Set the horizontal hold at the center of its range and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally. (For location see tube placement chart).

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate audio detector buzz, adjust the buzz control for MINIMUM buzz and maximum sound. (For location see tube placement chart).

FUSES

A circuit breaker is used for LV power supply protection. (For placement see tube placement chart).

CENTERING

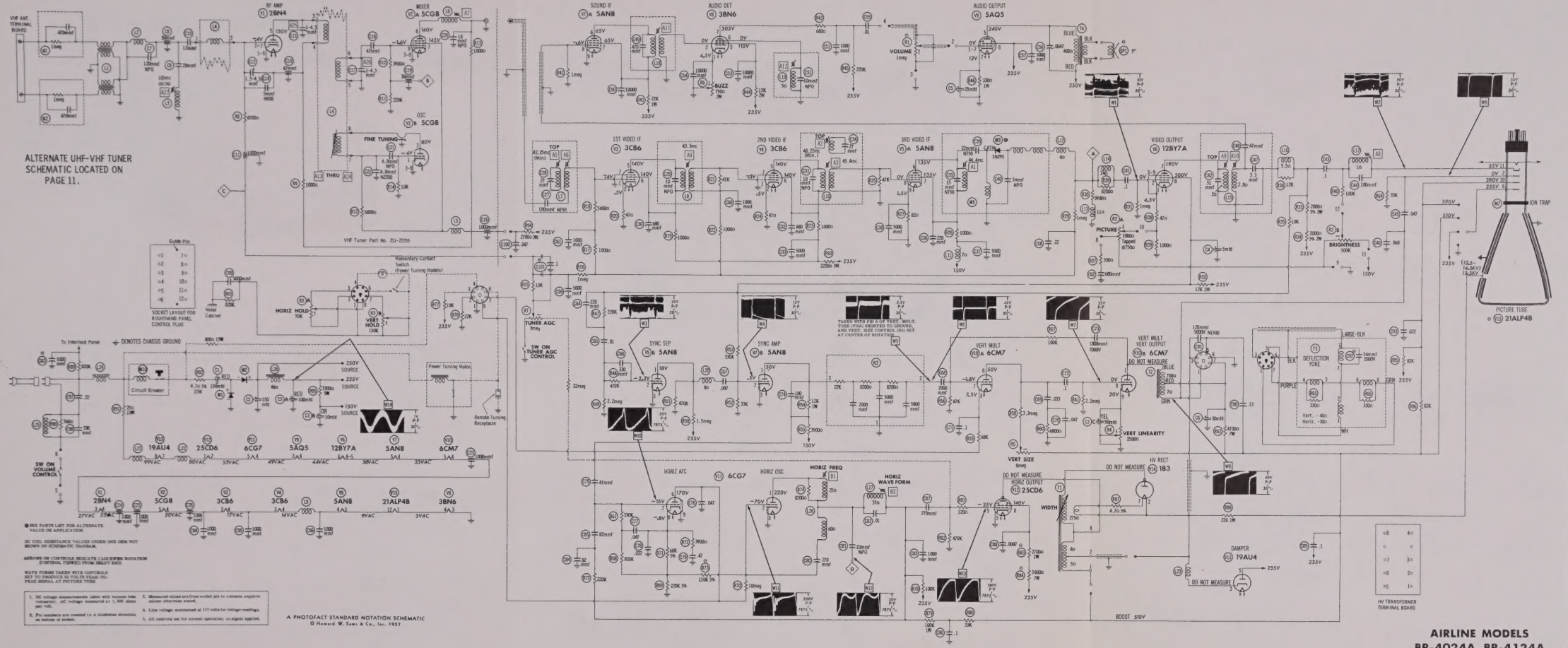
Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

ANTI-PIN CUSHION CORRECTION

Reduce the picture size so that the sides of the raster are visible. Position 2 magnets so that all sides are straight.

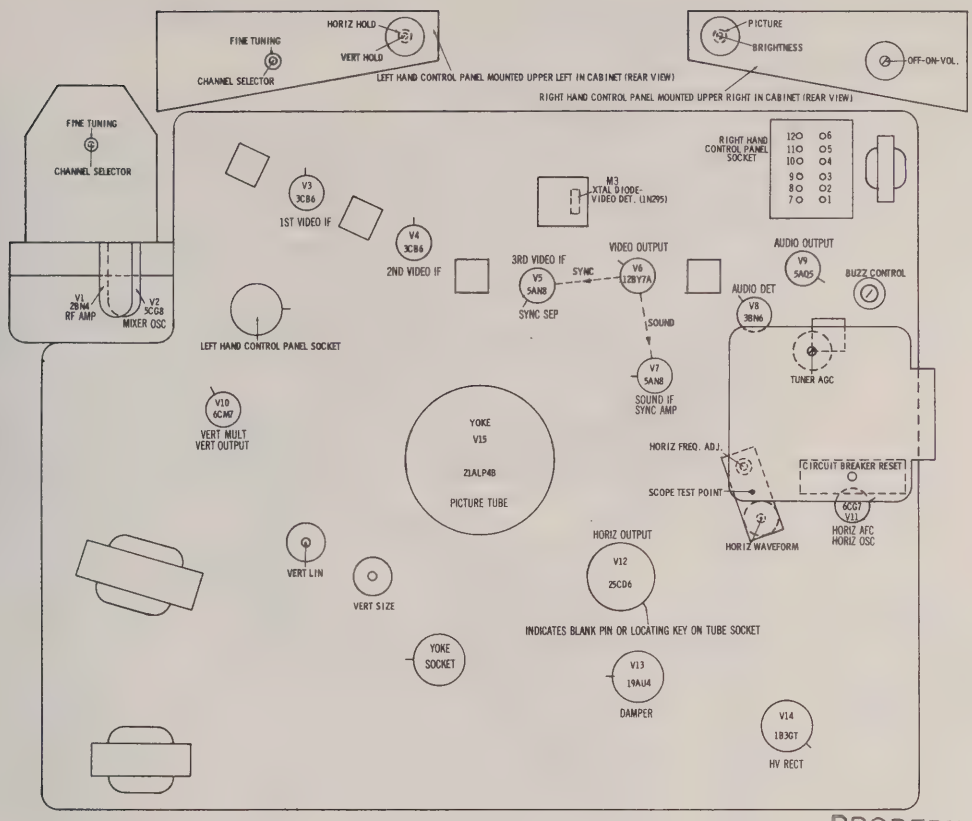
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



AIRLINE MODELS
BR-4024A, BR-4124A

TUBE PLACEMENT CHART



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

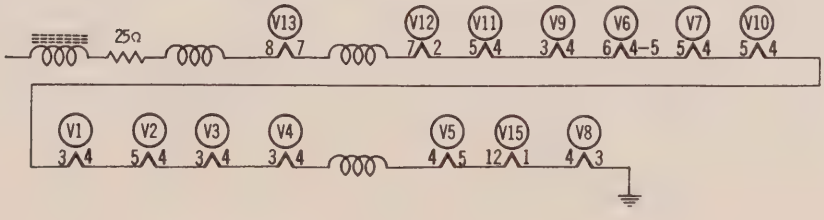
POWER SUPPLY FAILURE
No raster, no sound - Circuit Breaker (M10), Rectifier (M1, M2)

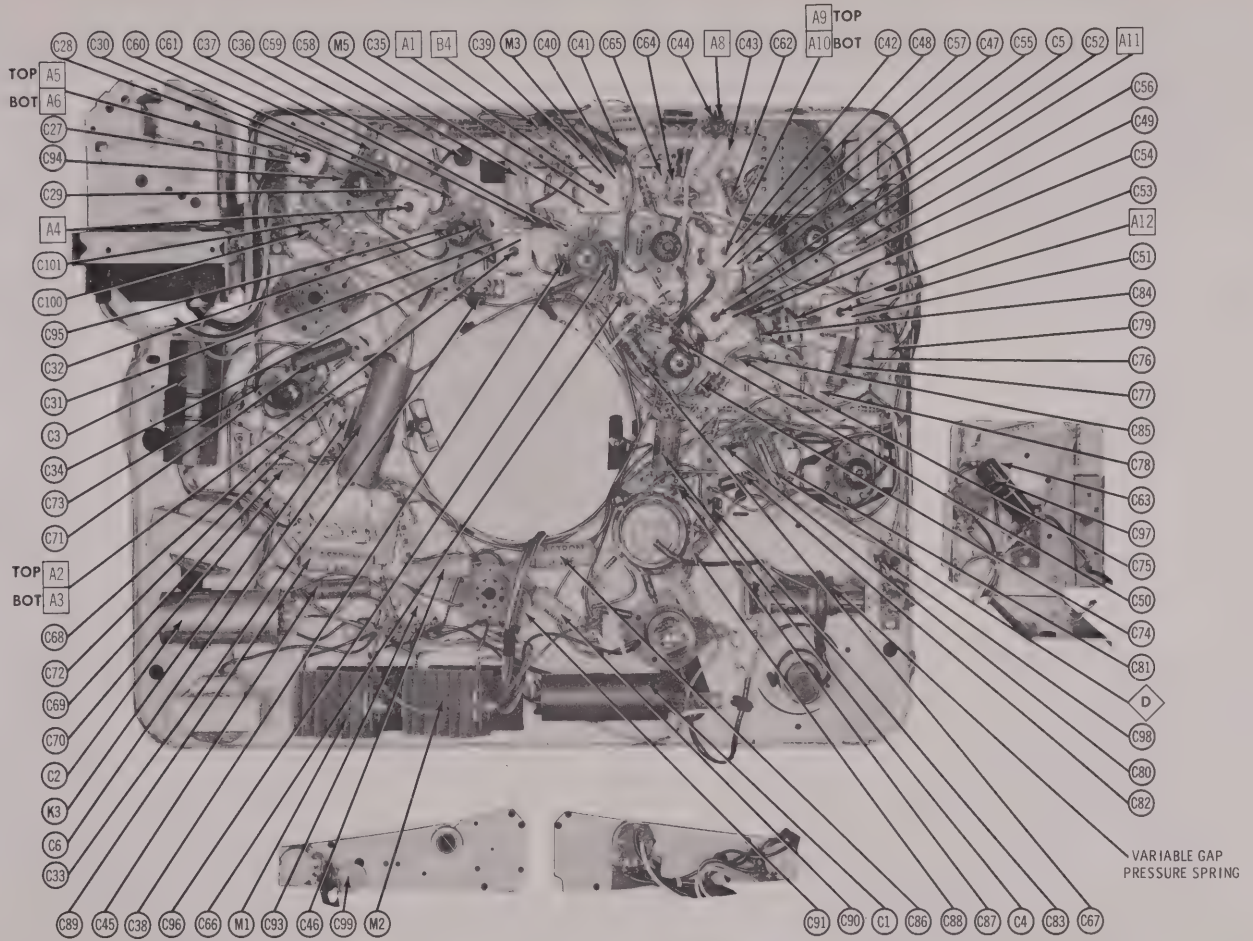
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V3, V4, V5, Diode (M3), V6
No pic, no sound, has snow - V1, V2
No pic, has sound, has raster - V6, V15
Has pic, no sound - V7, V8, V9

SYNC FAILURE
No vert. sync - V5, V7
No horiz. sync - V5, V7, V11
No vert. or horiz. sync - V5, V7

SWEEP FAILURE
No raster, has sound - V11, V12, V13, V14, V15
No vertical deflection - V10
Poor vert. linearity or foldover - V10
Poor horiz. linearity or foldover - V11, V12, V13
Narrow picture - V11, V12, V13, M1, M2
Vert. off freq. - V10
Horiz. off freq. - V11

This receiver employs tubes used in a series filament network, an open filament in any tube in the series will cause the set to be inoperative. (See circuit below).





CAPACITOR AND ALIGNMENT IDENTIFICATION

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
The High Voltage lead should be securely taped and kept away from the chassis.

VIDEO IF ALIGNMENT

Connect a 1000MMF capacitor across the scope terminals.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	1000MMF	High side to pin 1 (grid) of 3CB6 (V3). Low side to chassis.	Not used	44.4MC (Unmod)	10	USE VTVM. DC probe to point (A). Common to chassis.	A1	Attenuate generator output to maintain not more than 2 volts at VTVM. Adjust for maximum deflection.
2.	"	"	"	48.22MC	"	"	A2	Adjust for MINIMUM deflection.
3.	"	"	"	45.4MC	"	"	A3	Attenuate generator output to maintain not more than 2 volts at VTVM. Adjust for maximum deflection. Repeat step 2.
4.	"	"	"	43.3MC	"	"	A4	Attenuate generator output to maintain not more than 2 volts at VTVM. Adjust for maximum deflection.
5.	"	"	44.0MC	43.65MC 46.75MC	"	Vert. Amp. thru 10K to point (A). Low side to chassis.		Adjust A1 for flat-top response.
6.	"	"	"	"	"	"		Check for response curve similar to Fig. 1 with markers at 40%. If curve is not correct, repeat steps 1 thru 3.
7.	"	High side to point (B). Low side to chassis.	Not used	42.25MC	"	USE VTVM. DC probe to point (A) Common to chassis.	A5	Use only enough generator output to provide usable indication on VTVM. Adjust for MINIMUM deflection.
8.	"	"	44.0MC	43.65MC 46.75MC	"	Vert. Amp. thru 10K to point (A). Low side to chassis.	A6, A7	Adjust for response similar to Fig. 2 with markers at 50%.

4.5MC TRAP ALIGNMENT

Tune in a TV station and adjust the fine tuning until sound bars just appear in the picture.
Adjust A8 fully counter clockwise, then clockwise until the horizontal scanning lines are smooth and continuous.

SOUND IF ALIGNMENT

Restore the receiver to normal operation. Tune in a TV station and adjust the fine tuning until sound bars just appear in the picture. Adjust A9 fully counter clockwise. Then clockwise until the horizontal scanning lines are smooth and continuous. Readjust the fine tuning for clearest picture and best sound. Insert an attenuator in series with the antenna and the receiver antenna terminals so that the signal strength may be varied from weak to strong. If a suitable attenuator is not available, stray feed the signal to the receiver by placing the antenna lead-in near the receiving antenna terminals. Reduce the signal input to the receiver so that the signal falls below the limiting level of the 3BN6 (V8) as evidenced by a hiss in the sound. Adjust A10, A11, A12 and the buzz control (R6) for maximum clear sound and MINIMUM buzz. If the hiss disappears during alignment, increase attenuation until the hiss reappears.

CSCILLATOR ALIGNMENT

Connect the negative lead of a 1.5 volt bias supply to point (C). Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the center of its range.
Use only enough sweep generator output to provide usable pattern on scope.
The channel oscillator adjustment slugs are reached thru a hole in the front of the tuner as the channel switch is turned to each channel.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC	13	Vert. Amp. thru 47K to point (A). Low side to chassis.	A13	Adjust to place video marker at 50% as in Fig. 3.
			207MC (10MC Swp)	205.25MC	12		A14	
			201MC (10MC Swp)	199.25MC	11		A15	
			195MC (10MC Swp)	193.25MC	10		A16	
			189MC (10MC Swp)	187.25MC	9		A17	
			183MC (10MC Swp)	181.25MC	8		A18	
			177MC (10MC Swp)	175.25MC	7		A19	
			85MC (10MC Swp)	83.25MC	6		A20	
			79MC (10MC Swp)	77.25MC	5		A21	
			69MC (10MC Swp)	67.25MC	4		A22	
			63MC (10MC Swp)	61.25MC	3		A23	
			57MC (10MC Swp)	55.25MC	2		A24	

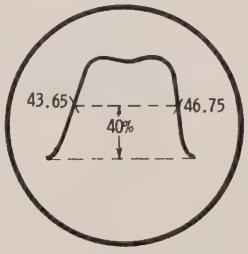


FIG. 1

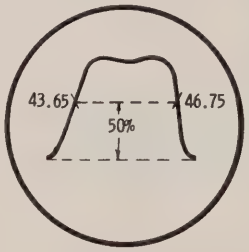


FIG. 2

ALIGNMENT INSTRUCTIONS (cont)

RF AND MIXER ALIGNMENT

Connect bias as under "Oscillator Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	195MC (10MC Swp)	193.25MC 197.75MC	10	Vert. Amp. thru 10K to point Ⓑ. Low side to chassis.	A25, A26	Adjust A25 and A26 for response similar to Fig. 4 with markers on shoulders of curve.
11.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 4. If markers fall below 70% on any channel, make compromise adjustment of A25, and A26 with channel switch set to that channel. Check all other channels to see that they have not been seriously affected.
			207MC (10MC Swp)	205.25MC 209.75MC	12			
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			
12.	"	"	Not used	105.0MC	2	USE VTVM. DC probe to point Ⓐ. Common to chassis.	A27	Adjust for MINIMUM deflection.

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10K to point Ⓑ. Low side to chassis.	A28, A29, A30	Adjust for response curve similar to Fig. 4 with markers above 90%.
14.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 4. If markers fall below 70% on any channel, make compromise adjustments of A28, A29 and A30 with channel switch set to that channel. Check all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

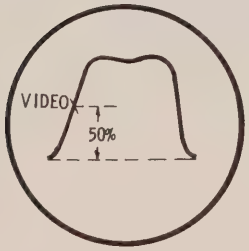


FIG. 3

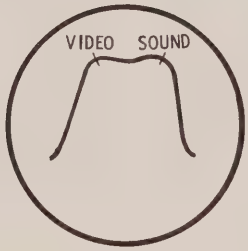
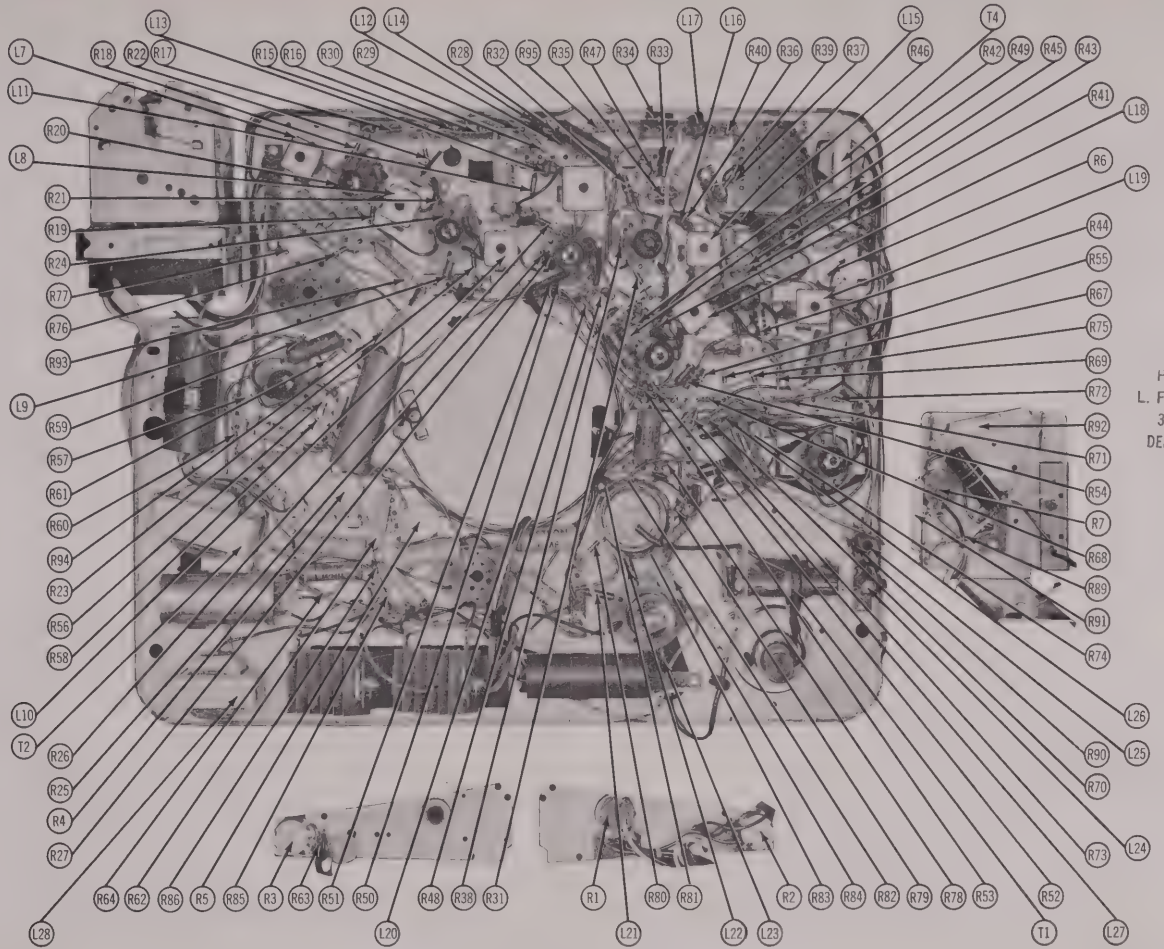


FIG. 4



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO

RESISTOR AND INDUCTOR IDENTIFICATION

RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	2BN4	0Ω	2Meg	9Ω	8Ω	† 3700Ω	0Ω	2Meg		
V2	5CG8	10K	† 9500Ω	0Ω	6Ω	8Ω	† 3700Ω	† 2700Ω	0Ω	224K
V3	3CB6	1Meg	47Ω	6Ω	5Ω	† 3200Ω	† 3200Ω	0Ω		
V4	3CB6	1Meg	47Ω	5Ω	4Ω	† 3200Ω	† 3200Ω	0Ω		
V5	5AN8	330K	2.6Meg	0Ω	4Ω	2.5Ω	† 4300Ω	† 4300Ω	.1Ω	82Ω
V6	12BY7A	• 270Ω	1Meg	•270Ω	13Ω	13Ω	14Ω	† 4000Ω	† 12K	• 270Ω
V7	5AN8	† 19K	30K	0Ω	11Ω	13Ω	† 22K	† 22K	1Meg	0Ω
V8	3BN6	•450Ω	.3Ω	0Ω	1Ω	† 12K	5Ω	† 220K		
V9	5AQ5	•50Ω	330Ω	15.5Ω	14Ω	† 400Ω	† 46Ω	• 50Ω		
V10	6CM7	ǂ5400Ω	TP	•170K	9Ω	11Ω	ǂ• 3.8Meg	47K	2.2Meg	• 1100Ω
V11	6CG7	† 100K	340K	0Ω	15.5Ω	17Ω	† • 22K	1.4Meg	280K	0Ω
V12	25CD6GA	TP	17Ω	0Ω	NC	470K	NC	25Ω	† 8300Ω	TOP CAP ǂ 5Ω
V13	19AU4	TP	NC	¶	TP	† 46Ω	NC	25Ω	30Ω	
V14	1B3GT		PINS	1 THRU 8	HAVE	INFINITE	RESISTANCE			TOP CAP ǂ 280Ω
V15	21ALP4B	1Ω	33K	PIN 6 † 46Ω	PIN 10 ǂ50K	PIN 11 •180K	PIN 12 2.5Ω			

NC NO CONNECTION
TP TIE POINT
† MEASURED FROM OUTPUT OF M2.
• THIS READING WILL VARY, CONTROL SET FOR NORMAL OPERATION.
ǂ MEASURED FROM PIN 3 OF V13.
¶ THIS READING CAN VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 7 push-on type control knobs from the front. NCTE: On power tuning models, DO NOT attempt to remove the on-off or channel selector buttons. On these models remove the 4 metal screws, the escutcheon, and remove the channel indicator disc and the fine tuning drive.

2. Lay receiver face down on a soft pad .

3. Remove 6 spring clips, 2 metal screws and the rear cover.

4. Remove speaker leads, picture tube socket, HV lead, yoke plug and 2 control plugs.

5. Remove 2 metal screws from the tuner bracket.

6. Remove 1 metal screw holding the top chassis brace.

7. Remove 4 metal screws holding the chassis.

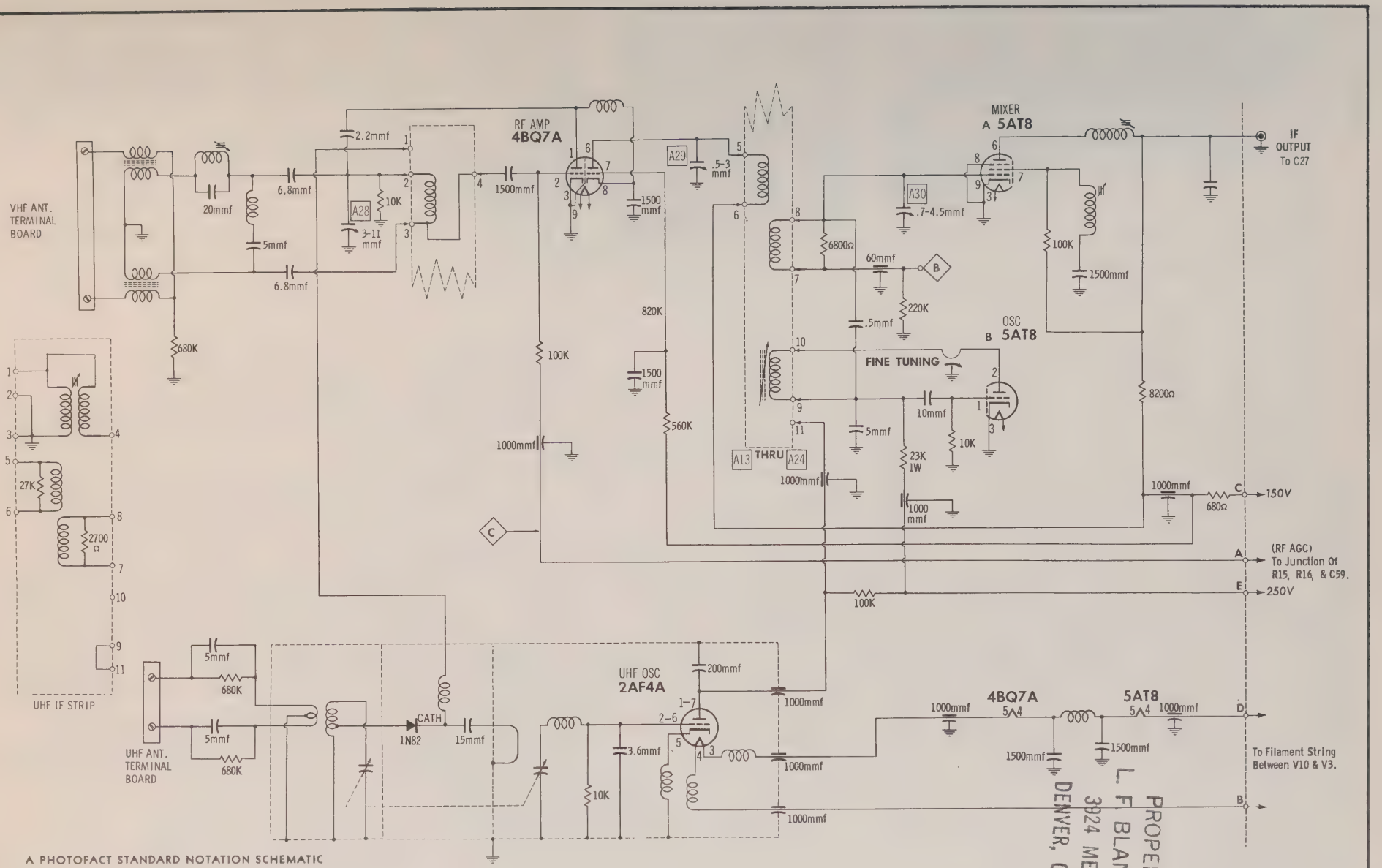
8. Remove the chassis.

9. Set the cabinet upright.

10. Remove 4 metal screws and the escutcheon from the front.

11. Remove the 4 metal screws holding the 2 control panels, and remove the panels.

12. Remove 2 speaker nuts and the speaker.



A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1957

ALTERNATE TUNER SCHEMATIC

BR-4024A, BR-4124A

AIRLINE MODELS

PROPERTY OF
L. F. BLANKENSHIP
3824 MEADE St.
DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	R F Amplifier	2BN4	
V2	Mixer-Oscillator	6CB8	
V3	1st Video IF Amp	6CB6	
V4	2nd Video IF Amp	6CB6	
V5	3rd Video IF Amp	6CB6	
	Sync Separator Video Output	5AN8 2BY7A	
V6	2nd IF Amp, Sync Amp	5AN8	

ITEM No.	USE	TYPE	NOTES
V9	Audio Detector	3BN6	
V9	Audio Output	5AQ8	
V10	Vert Mult -Vert Output	6CM7	
V11	Horiz. AFC-Horiz. Osc.	6CG7	
V12	Horiz. Output	25CD6	
V13	Damper	19AU4	
V14	HV Rectifier	1B3GT	

PICTURE TUBE

ITEM No.	REPLACEMENT DATA AIRLINE PART No.	CBS PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	NOTES
V15	21ALP43	21ALP43 21ALP44 21ALP4	21ALP43, 21ALP44	21ALP4A, 21ALP4B, 21ALP4C, 21ALP4D	① Silver Screen "85" Aluminized
	21AVP4A		21AVP43/ 21AVP4A ②	21AVP4A/ 21AVP4B ②	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP	VOLT	REPLACEMENT DATA AIRLINE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	150	50	8C-37137	PRH-100	XAD5R1	TC495	TD-150-150	MT-15150	TVA-1422
C2	150	300	8C-37131	AFHSI-37-25		FP151	TMS-43	S-300	TVL-1584
C3,4	100	30	8C-37089	PRS-083		BR506 DC020	WG-855	7-537 MT-0255	R3237 *
C5	30	300							
C6	30	50							
C7	5	300	8C-24174-1	PR8350V4	BR435	TC60	TD-8-350	FM-3508	TVA-1601
C8	45	25	8C-27132	PR8SV25	BR8S-25	TC76	TD-25-25	FM-0225	TVA-1205
C9	10	450	8C-27078	PR8450V30	BR3045	TC77	TD-30-450	FM-4530	TVA-1711

* Non-catalog item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors

ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C7	120		13L8-DBIBK 13M-33BA30U2- 35	NPO-SI 120	TCZ-120	C10T12C	TCO-120		5TCC-T12	NP0
C9	39		13R-005							
C10	12		13R-003							
C11	1000		13M330EA102Z- 33	EF-001	MFT-1000			502C-D1		
C12	1.5- 4.5				839-5		533-B			
C13	1.0- 4.5									
C14	5		31B-903-07		839-5		533-B			N900
C15	47		13M302U470J							
C16	1000		13T-5L2	EF-002	MFT-1000			502C-D1		
C17	1.0- 4.5		31B-903-07		839-5		533-B			
C18	47		13R-005							
C19	30		13M-330EA30UM- 66							
C20	10		13L10C180U		TCZ-18	C10QBC	TCO-18			NP0
C21	6.8		13R-008		TCZ-6R8	C10V8C	TCO-6.8	2T-5568	5TCCB-V6S	
C22	6.8		13R-007							N3300
C23	1000		10B5-2T60J	EF-001	MFT-1000			503C-D1		
C24	1000		10B5-2T60J	EF-001	MFT-1000			503C-D1		
C25	1000		10B5-2T60J	EF-001	MFT-1000			503C-D1		
C27	100		N750-SI 100	TCM-100	TCZ-100	C10TIU	TCT-100	5T-531	5TCU-T1	N750
C28	47			TCZ-47			ED-27	DC-5427		
C29	10			NPO-SI 10	TCZ-10	C10QJC	TCO-10	2T-541	5TCC-QI	NP0
C30	680			SI 680	D5-681	BYA10T68	CD-680	DC-3568	5GA-T68	
C31	0			NPO-SI 10	TCZ-10	C10QJC	TCO-10	2T-541	5TCC-QI	NP0
C32	680			SI 680	D5-681	BYA10T68	CD-680	DC-3568	5GA-T68	
C33	500			BPD-005	DD-501	BYA10D5	ED-005	DC525	5HK-D5	
C34	47				TCZ-27	L10Q27	ED-27	UC-5427		
C35	15			N750-SI 15	TCZ-15	C10QSU	TCT-15		5TCU-Q15	N750
C36	220			BPD-00022	DD-221	L10T22	ED-220	UC-5322	5GA-T22	
C37	5000			BPD-500	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C38	5000			BPD-500	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C39	22			N750-SI 22	TCN-22	C10Q22U	TCT-22			
C40	5			NPO-SI 5	TCZ-5	C10Y5C	TCO-5	2T-555	5TCC-Y5	NP0
C41	1	300		P25BN-1	DF-104	CUB2P1		GEM-201	2TM-P1	
C42	51			NPO-SI 50	TCZ-51	L10Q51	ED-51			
C43	1	400		P48BN-1	DF-104	CUB4P1		GEM-401	4TM-P1	
C44	100			BPD-0001	DD-101	L10T1	ED-100	UC-531	5GA-T1	
C45	.047	600		BPD-05	DF-503	CUB5S47		GEM-6147	5TM-S47	
C46	.068	600		P68BN-6068		CUB6S6		GEM-6168	5TM-S68	
C47	33			NPO-SI 3.3	TCZ-3R3	C10Y3JC	TCO-3.3	DC-5533	5TCC-Y3S	
C48	47			BPD-00047	DD-470	L10Q47	ED-47	UC-5447	5TCC-Q47	
C49	470			BPD-00047	DD-470	BYA10T47	ED-470	UC-5347	5GA-T47	
C50	10000			BPD-01	DD-103	BYA5S1	ED-01	DC511	5HK-S1	
C51	10			NPO-SI 10	TCZ-10	C10QJC	TCO-10	2T-541	5TCC-QI	NP0
C52	1000			BPD-001	DD-102	BYA5S1	ED-01	DC511	5HK-D1	
C53	10000			BPD-01	DD-103	BYA5S1	ED-01	DC511	5HK-S1	
C54	10000			BPD-01	DD-103	BYA5S1	ED-01	DC511	5HK-S1	
C55	91	400		BPD-01	DD-101	CUB4S1	ED-01	GEM-411	4TM-S1	
C56	.047	600		BPD-0047	DF-473	CUB5D47	ED-0047	GEM-6247	5TM-D47	
C57	5000			BPD-006	DD-502	BYA5D5	ED-005	DC525	5HK-D5	
C58	22	200		P28BN-23		CUB2P23		GEM-3022	2TM-P23	
C59	5000			BPD-006	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C60	1000			BPD-001	DD-102	BYA5D1	ED-001	DC521	5HK-D1	
C61	1000			BPD-001	DD-102	BYA5D1	ED-001	DC521	5HK-D1	
C62	680			SI 680	D6-681	BYA10T68	CD-680	DC-5368	5GA-T68	
C63	5000			BPD-006	DD-502	BYA10D5	ED-005	DC525	5HK-D5	Note 1
C64	220			BPD-00022	DD-221	L10T22	ED-220	UC-5322	4TM-S1	
C65	91	400		BPD-01	DD-103	CUB4S1	ED-01	GEM-411	4TM-S1	
C66	330			SI 330	D6-331	L10T33	ED-330	UC-5333	5GA-T33	
C67	.047	300		BPD-05	DF-503	CUB2S47		GEM-6147	3TM-S47	
C68	2000			SI 2000	D6-202	BYA10Z2	ED-002	DC532	5HK-D2	
C69	033	400		BPD-03	DF-303	CUB4S33		GEM-6133	4TM-S33	
C70	.047	400		BPD-05	DF-503	CUB4S47		GEM-6147	4TM-S47	

CAPACITORS (cont)

ITEM No.	RATING CAP	VOLT	REPLACEMENT DATA AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C71	1	600		P28BN-1	DF-104	CUB2P1		GEM-301	2TM-P1	
C72	1	400		P48BN-1	DF-104	CUB4P1		GEM-401	4TM-P1	
C73	1000	2000		HV3D-30-1000	D2D0-102	BYB2D1		BC9D01	20C4-D1	
C74	100			SI 100	D6-101	LJ2T1	ED-100	UC-531	5GA-T1	
C75	47			BPD-000047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C76	.047	400		BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C77	.047	400		BPD-05	DF-503	CUB2S47		GEM-2147	2TM-S47	
C78	.022	400		BPD-03	DF-303	CUB2S22	ED-02	GEM-2122	2TM-S22	
C79	47	400		P28BN-47		CUB2P47		GEM-2047	2TM-P47	
C80	.0022			BPD-00022T	DD-271	L10T27	ED-270	UC-5327	5GA-T27	
C81	10			NPO-SI 10	TCZ-10	C10QJC	ED-10	2T-541	5TCC-QI	NP0
C82	.01	600		BPD-01	DD-103	CUB6S1	ED-01	GEM-611	5TM-S1	
C83	1000			BPD-001	DD-102	BYA5D1	ED-001	DC521	5HK-D1	
C84	82			SI 82	D6-820	LJ0Q82	ED-82	UC-5483	5GA-Q82	
C85	82			SI 82	D6-820	LJ0Q82	ED-82	UC-5483	5GA-Q82	
C86	1	600		P68BN-1	DF-104	CUB6P1		GEM-601	5TM-P1	
C87	.470			SI 470	DD-471	LJ0T47	ED-470	UC-5317	5GA-T47	
C88	.0047	600		BPD-0047	DF-473	CUB6D47	ED-0047	GEM-6247	6TM-D47	
C89	1	600		P68BN-1	DF-104	CUB6P1		GEM-601	5TM-P1	
C90	.15	300		P28BN-15		CUB2P15		GEM-2015	2TM-P15	
C91	120	5000	SG-35325		D2B0-150	EYA2QG5	ED-02	DC10456	20GA-G5	N1500 Note 3
C92	56	3000				CUB6G23	ED-02	GEM-6123	6TM-G23	
C93	.043	600		BPD-03	DF-303		ED-01	DC521	5HK-D1	
C94	1000			BPD-001	DD-102	BYA5D1	ED-001	DC521	5HK-D1	
C95	1000			BPD-001	DD-102	BYA5D1	ED-001	DC521	5HK-D1	
C96	1000			BPD-001	DD-102	BYA5D1	ED-001	DC521	5HK-D1	
C97	.22	400		P48BN-22		CUB4P22		GEM-4022	5TM-P22	
C98	330			BPD-00033	DD-331	LJ0T33	ED-330	UC-5333	5GA-T33	
C99	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C100	.047	600		BPD-05	DF-503	CUB6S47		GEM-6147	6TM-S47	
C101	.1	300		P28BN-1	DF-104	CUB2P1		GEM-201	2TM-P1	Note 3

Note 1. Some versions may use a .1MFD @ 300V in this application.
Note 2. Some versions use a 68MMF @ 3000V in this application.
Note 3. Not used in some versions.

CONTROLS

ITEM No	RATING RESISTANCE	WATTS	REPLACEMENT DATA AIRLINE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1Meg	1	10A-25916	B-52	A47-1Meg-Z	Q33-137	U53	Volume - Note 1
B	Shaft			Not Req.	K3B-3	Not Req.	Not Req.	
C	Switch			KS-1	RWE-12	Not Req.	UB-58	Picture - tap @ 750Ω
R2A	1000Ω	1	10B-36928		RTV-615		UT2G	Brightness
B	500K			F1-39	Not Req.		Not Req.	Horiz. Hold
R3A	50K		10B-36828	R2-33	UE-614		Not Req.	Vert. Hold
B	150K			AB-7	Not Req.		Not Req.	Vert. Linearity
R4A	2500Ω	1	10B-37707	AE-1	A47-3500-0	B11-111	UT	
B	Shaft			AB-89	F32-1/4	TMI-131	Not Req.	Vert. Size
R5A	6Meg	1	10B-37708	AS-1		QU-143		
B	Shaft					Not Req.		Buzz - wire wound
R6	750Ω	2	10D-35857-1	B-54	B5-500	Q11-140	FL-750	Tuner AGC
R7A	2Meg	1	10A-35867	Not Req.	A47-2Meg-S	Not Req.	U59	
B	Shaft			K3B-3	RWE-12		UB-58	
C	Switch			KS-1		F6-1		

Note 1. Used in Models TVI-9404A, TVI-9408A, TVI-9407A. Alternate part #10B-36867 with no switch attached used in Models TVI-9405A, TVI-9409A, TVI-9410A, TVI-9411A.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA AIRLINE PART No.	IRC	NOTES
R8	470Ω			BTS-470	
R9	1000Ω			BTS-1000	
R10	3900Ω			BTS-3900	
R11	330K			BTS-330K	
R12	6800Ω			BTS-6800	
R13	1000Ω			BTS-1000	
R14	10K			BTS-10K	
R15	10K				
R16	1Meg				
R17	1000Ω				
R18	5000Ω			BTS-1000	
R19	1000Ω			BTS-47	
R20	47Ω			BTS-47K	
R21	47K				
R22	1000Ω			BTS-1000	
R23	1000Ω			BTS-47	
R24	47Ω			BTS-47K	
R25	47K			BTS-1000	
R26	1000Ω			BTS-83	
R27	82Ω				
R28	8200Ω			BTS-3900	
R29	1Meg			BTS-1Meg	
R30	3900Ω			BTA-12K	
R31	1Meg				
R33	12K	1		BTS-10K	
R35	30000 5%	2		BTS-12K	
R36	30000 5%	2		BTS-330	
R38	10K			BTS-47	
R39	12K			BTS-330	
R40	330Ω			BTS-470	
R41	470Ω			BTS-1000	
R42	1Meg			BTS-1Meg	
R43	680Ω			BTS-680	
R44	12K			BTS-12K	
R45	330K			BTS-330K	
R46	330Ω	1		BTA-330	
R47	220K			BTS-220K	
R48	470K			BTS-470K	
R49	2.2Meg			BTS-2.2Meg	
R50	1.5Meg			BTS-1.5Meg	
R51	470K			BTS-470K	

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA AIRLINE PART No.	IRC	NOTES
R52	33K			BTS-33K	
R53	330K			BTS-330K	
R54	12K	1		BTA-12K	
R55	3900Ω			BTS-3900	
R56	47K			BTS-47K	
R57	100K			BTS-100K	
R58	2.2Meg			BTS-2.2Meg	
R59	68K			BTS-68K	
R60	5800Ω			BTS-5800	
R61	2.2Meg			BTS-2.2Meg	
R62	4700Ω	7	9C13-1107		
R63	820K			BTS-330K	
R64	33K			BTS-33K	
R65	330Ω				
R66	330Ω				
R67	330K				
R68	82K			BTS-22K	
R69	220K 5%			BTS-18K	
R70	10Meg			BTS-100K	
R71	68K 5%			BTA-100K	
R72	3900Ω		-	BTS-33K	Note 1
R73	150K 5%			BTS-120	
R74	8200Ω			BTS-470K	
R75	220K			BTS-22K	
R76	22K			BTS-18K	
R77	18K			BTS-100K	
R78	100K	1		BTA-100K	
R79	100K			BTS-33K	
R80	33K			BTS-120	
R81	120Ω			BTS-470K	
R82	470K			BTS-3700	Note 3
R83	3700Ω	1			
R84	3900Ω	7	9C1-1071		
R85	82K			BTS-82K	
R86	82K			BTS-82K	
R87	4.7M 5%		9C13-1108	BW1-4.7 5%	
R88	22K	1		BW1-22K	
R89	820K			BTS-820K	
R90	560Ω			BTS-560	
R91	250	10	9C14-1117	PW10-38	
R92	4.7Ω 5%	15	9C15-1103		
R93	2300Ω	5			
R94	2700Ω	3	9C11-1104		
R95	3300Ω	5	9C13-1106	P47-3300	

Note 1. A 130K may be used in some versions.
Note 2. A single 8300Ω, 5W may be used instead of a 2700Ω, 1W and a 5600Ω, 7W.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA AIRLINE PART No.	Hallderson PART No.	Merit PART No.	RCA TYPE No.	Rem PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	Horiz. Output Trans.	12E-27097	FB451 ①				A-8298 ①	FLY-99 * ①	D-83 ① * ①
T2	Vert. Output Trans.	12E-27156	21804 ②	A-3037 ②	22ZT1 ②	V31 ②	VO-101	28S52 ②	A-102X ②
T3A	Yoke(90°)Horiz. (18.75MS)	21C-27120 ③	DF607 ①	MDF-92 ①/T	25SD1 ①/T	Y99F19.43 ①/T	DY-16A ①/T	Y-16 ①/T	Y-41 & WW1
B	Vert.(35MS)	16M-23770 ④ 49M-27154 ④	?	?					TCI ④ CLI ④

① Use original variable gap pressure spring.
② Drill new mounting hole(s).
③ Includes rear cover and centering device.
④ Rear cover and centering device.
* Yoke clamp.
# Use original yoke damping network.
& Use original rear cover and centering device.
! This part may be superseded by Paris Manufacturer's introduction of special unit for this application.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type is Listed

ORIGINAL TERMINAL (CONNECTIONS)	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Rem Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
8	8				8	8	8
2	2				2	2	2
1	1				1	1	1

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	SEC.	REPLACEMENT DATA AIRLINE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T4	7700Ω	3-4Ω	12C-23704-2	22115 ①	A-3831 ①	A-8154 ①	24S83 ①	S-8X	① Drill one new mounting hole.

SPEAKER

ITEM No.	TYPE SIZE	FIELD	REPLACEMENT DATA AIRLINE PART No.	QUAM PART No.	NOTES
SP1	5"	PM	3-4Ω	18A-25935-1	5A07

COILS (RF-IF)

ITEM No.	USE	AIRLINE PART No.	NOTES
L2	Ant. Trans.	10S6-27617	
L3	Parallel Trap	10S6-27618	
L3	Series Trap	10S6-27615	
L4A	Ant. RF, Mixer Grid, Osc. Coils	10S6-27614-2	Channel 2
B	Ant. RF, Mixer Grid, Osc. Coils	10S6-27614-3	Channel 3
C	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-4	Channel 4
D	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-5	Channel 5
E	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-6	Channel 6
F	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-7	Channel 7

ITEM No.	USE	AIRLINE PART No.	NOTES
G	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-8	Channel 8
H	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-9	Channel 9
I	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-10	Channel 10
J	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-11	Channel 11
K	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-12	Channel 12
L	Ant., RF, Mixer Grid, Osc. Coils	10S6-27614-13	Channel 13
L5	RF Choke	10S6-27616	
L6	Mixer Plate Coil	10S6-27615	

ITEM No.	USE	REPLACEMENT DATA AIRLINE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L7	1st. Video IF	13A-26998				Includes 43.25MC Trap
L8	2nd. Video IF	13A-26994				
L9	Pix. Choke	13A-26995	19-1001		4604	L 4 Microhenries
L10	3rd. Video IF	13A-26995				Includes 48.25MC Trap
L11	Resonant Choke	13A-26997				9 Microhenries, 3MC
L12	Resonant Choke	13A-26996				12 Microhenries - 69MC
L13	Shunt Peaking Coil	13A-27302	19-3250	TV-186	6161	260 Microhenries
L14	Series Peaking Coil	13A-27467			6136	540 Microhenries
L15A	4.5MC Trap	13M-26979				
B	1st. Sound IF					
L16	Series Peaking Coil	13A-27468	19-3075		6173	90 Microhenries
L17	4.5MC Trap	13A-26990		TV-181		
L18	2nd. Sound IF	20I-23873-1				
L19	Quadrature Coil	13M-26998		TV-134		
L20	Resonant Choke	13A-26997				9 Microhenries, 3MC
L21	RF Choke	16A-26520	19-1004		4610	9 Microhenries
L22	RF Choke	16A-26520	19-1004		4610	9 Microhenries
L23	RF Choke	16A-26520	19-1004		4610	6 Microhenries
L24	Line Choke	13A-27404				47 Microhenries
L25	Line Choke	13M-27406				4 Microhenries

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES. PRI.	SEC.	REPLACEMENT DATA AIRLINE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No.	Rem PART No.	Thordarson PART No.	NOTES
L26	85Ω		12E-26993							Tapped @ 80Ω Horiz. Freq. Horiz. Wave form
L27	37Ω		13M-26992							

PARTS LIST AND DESCRIPTIONS (Continued)

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	AIRLINE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L28	.300A	46Ω	1.5 HY	16B-25146-3	C5037 ①	C-2996 ①	C-2326 ①	26C44	C-17X ①

① Drill one new mounting hole.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	AIRLINE PART No.	REPLACEMENT DATA
K1	Ant. Input	470MMF, 1Meg		
K2	Ant. Input	470MMF, 1Meg		
K3	Vert. Integrator	2000MMF, 5000MMF, 5000MMF, 22K, 8200Ω, 8200Ω	17A-27087	Aerovox PA-110 Centralab PC-100 Cornell-Dubilier 115TM1 Erie 1405-01 Sprague V-1

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA						NOTES
	CURRENT (Measured)	AIRLINE PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.	
M1	.335A	21J25315 ①	1241A ①	1N1007 ②	MR350 ①	6S450 ①	350A ①	
M2	.335A	21J25315 ①	1241A ①	1N1007 ②	MR350 ①	6S450 ①	350A ①	

① Selenium Type. ② Germanium type.

CRYSTAL DIODES

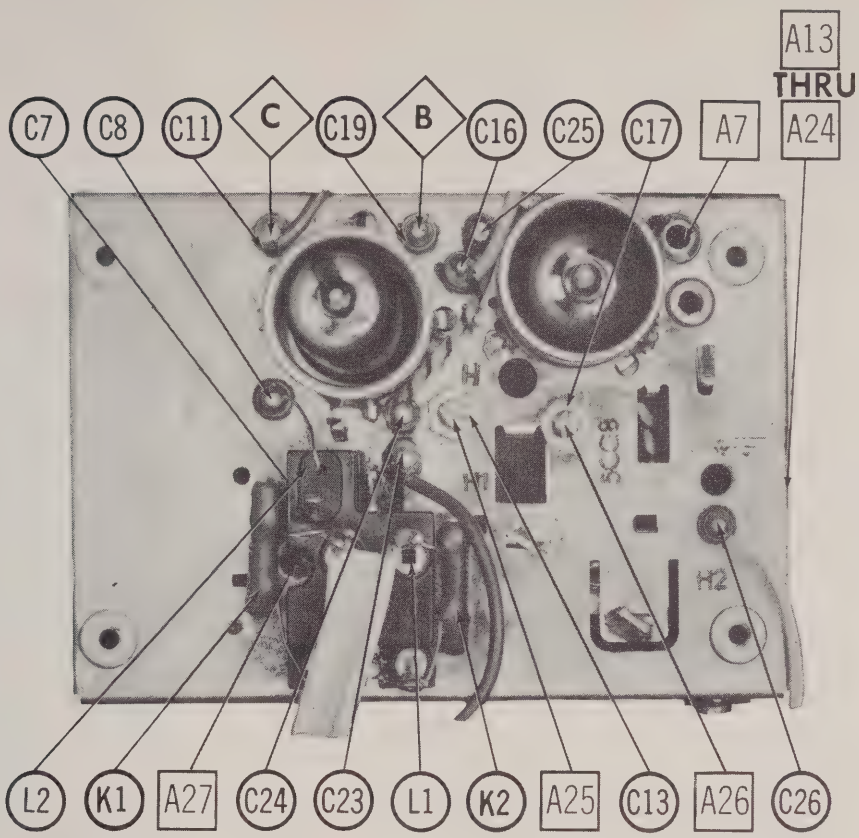
ITEM No.	ORIG. TYPE	REPLACEMENT DATA		NOTES
		AIRLINE PART No.	SYLVANIA PART No.	
M3	1N295 *		1N60	Video Detector (Pigtail)

* A CK706A may be used in some versions.

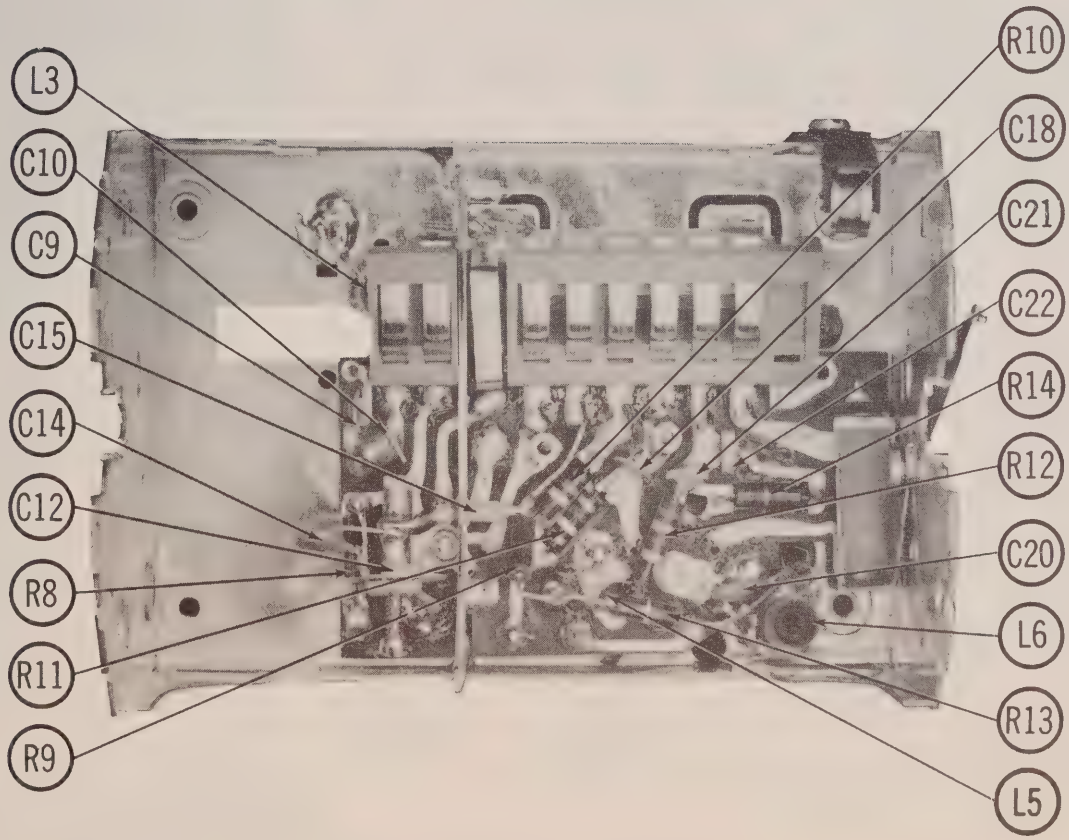
MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M4	Tuner	*	VHF, Used in Model BR-4024A
	Tuner	*	UHF-VHF, Used in Model BR-4124A
M5	Video Det. Assy.	13B-27003	Includes 4th. Video IF, Caps., RF Choke & Coils
M6	Centering Device	16M-23770	
M7	Ion Trap	16M-19705	
M8	Magnet	20I-26614	Anti-pin Cushion (2 used)
M9	Yoke Clamp	49M-27154	
M10	Circuit Breaker	20F-27084	
	Safety Glass	30M-26963	
	Knob	5B-26800-A29	On-off-volume
	Knob	5B-27542-A195	Picture
	Knob	5B-27545-A195	Brightness
	Knob	5B-27543-A195	Horiz. Hold
	Knob	5B-27544-A195	Vert. Hold
	Knob	5B-26395-A195	VHF Channel Selector, Model BR-4024A
	Knob	5B-26397-A195	VHF Channel Selector, Model BR-4124A
	Knob	5B-26392-A29	Fine Tuning, Model BR-4024A
	Knob	5B-26393-A29	Fine Tuning, Model BR-4124A
	Knob	5B-26394-A29	UHF Indicator, Model BR-4124A

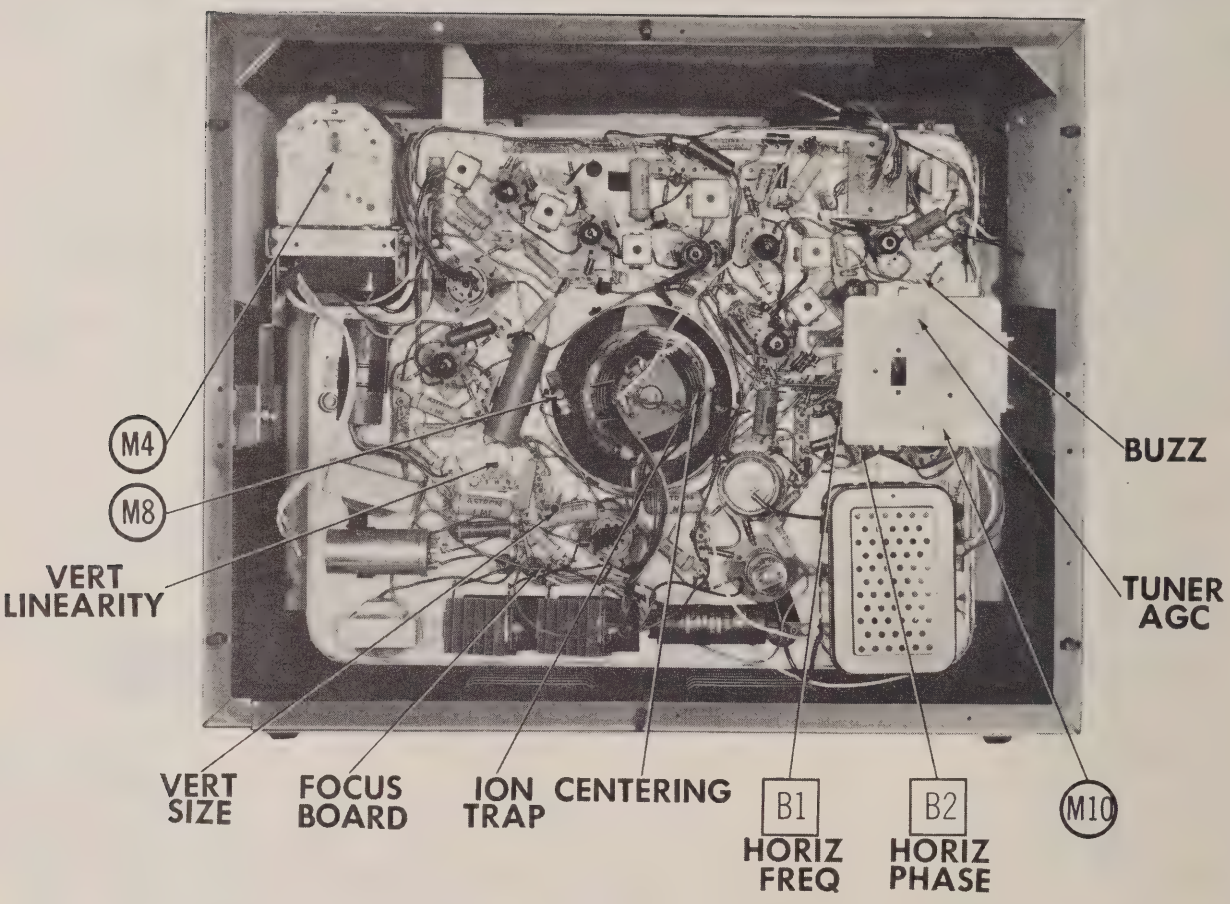
* Order by Model Number.



RF TUNER-TOP VIEW



RF TUNER-BOTTOM VIEW



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.

Turn the horizontal hold control (R3A) to the center of its range.

Connect a short clip lead across L27. Adjust the horizontal frequency coil slug (B1) until the picture synchronizes horizontally. Remove the clip lead from L27. Connect the vertical amplifier of the oscilloscope to point ⓓ. Low side to chassis. Adjust the horizontal waveform slug (B2) until a waveform similar to Fig. 5 is obtained with round and sharp peaks of equal amplitudes. While making this adjustment, keep the picture in sync with the horizontal hold control. Remove the scope connection and check the range of the horizontal hold control. The picture should fall out of sync at both extreme settings of the horizontal hold control.

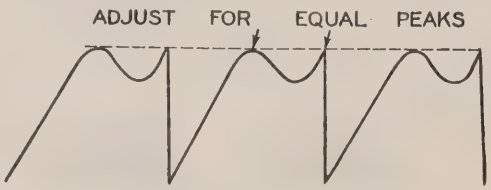
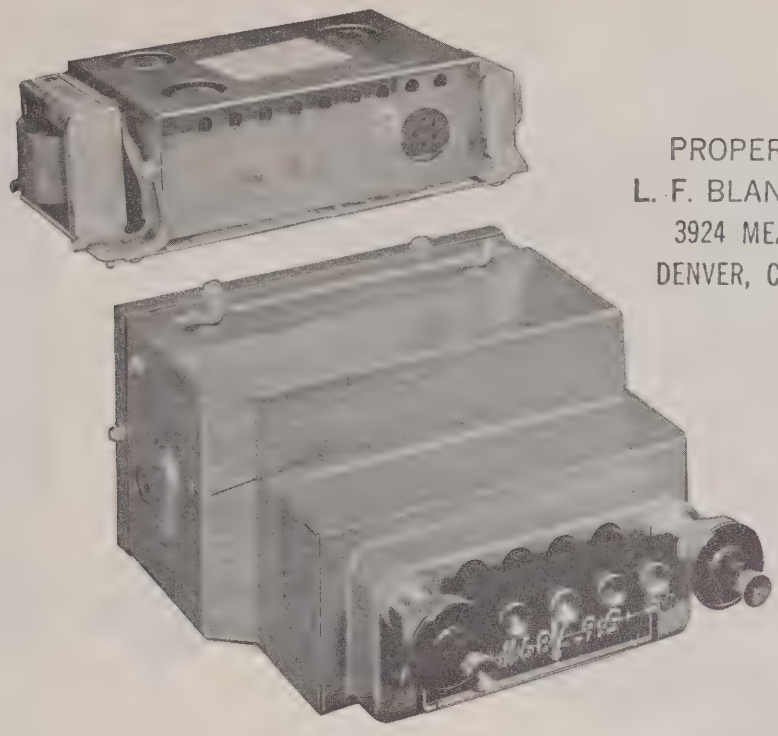


FIG. 5

ALLSTATE MODELS
6268, 6269 (Ch. 528.62680, 1, 528.62690, 1)



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

ALLSTATE MODELS
6268, 6269 (Ch. 528.62680, 1, 528.62690, 1)

TRADE NAME	Allstate Models 6268 (Ch. 528.62680, 528.62681), 6269 (Ch. 528, 62690, 528.62691)
SUPPLIER	Sears Roebuck & Co., 925 S. Homan, Chicago, Ill.
TYPE SET	Battery Operated Universal Type AM Automobile Receiver With Transistorized Output
TUBES (Four)	Types 12BL6 RF Amplifier, 12AD6 Converter, 12AF6 IF Amplifier, 12AE6 Det.-AVC-AF Amp.
POWER SUPPLY	12 Volt Storage Battery — RATING 1 Amp. @ 12.6 Volts DC
TUNING RANGE—BROADCAST	535KC-1605KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1MFD	High side to pin 7 (grid) of 12AD6 (V2) Low side to chassis	262KC (400~Mod.)	Extreme high freq. end of dial	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2	Fig. 1	Thru dummy to antenna receptacle	1610KC	"	"	A5	"
3	"	"	1400KC	Tune to 1400KC signal	"	A6, A7	"
4	With radio installed in car and antenna fully extended, tune in a weak station near 1400KC, adjust A7 for maximum volume.						

PUSHBUTTON ADJUSTMENT

1 Release pushbutton by turning approximately 1 turn counter clockwise.
2 Tune manually to desired station.
3 Press pushbutton in firmly and carefully release.
4 Set pushbutton by turning (with fingers) clockwise.
5 Repeat above procedure on remaining pushbuttons.

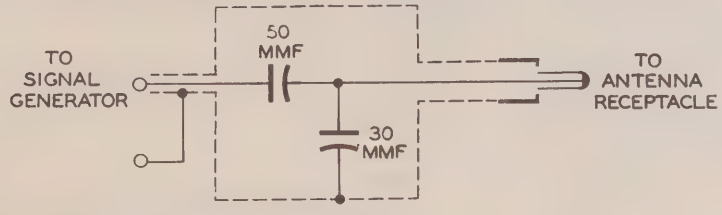


FIG. 1

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	12BL6	
V2	Converter	12AD6	
V3	IF Amplifier	12AF6	
V4	Det. -AVC-AF Amp.	12AE6	

TRANSISTORS

ITEM No.	USE	ALLSTATE PART NO.	NOTES
X1	Driver (2N176)	T83-1056	
X2	Output (2N176)	T83-1056	
X3	Output (2N176)	T83-1056	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	ALLSTATE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	200	15	T18-37-5	PRS15V250	BR2501	TC1502	TD-250-15	MTH-1525	TVA-1161
C2	500	3	T18-47-5	PRS6V500	BR500-6	TC605	TD-500-6	MTH-0650	TVA-1103
C3	500	15	T18-36-5	PRS15V500	BR5001	TC1505	TD-500-15	MTH-1550	TVA-1162

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

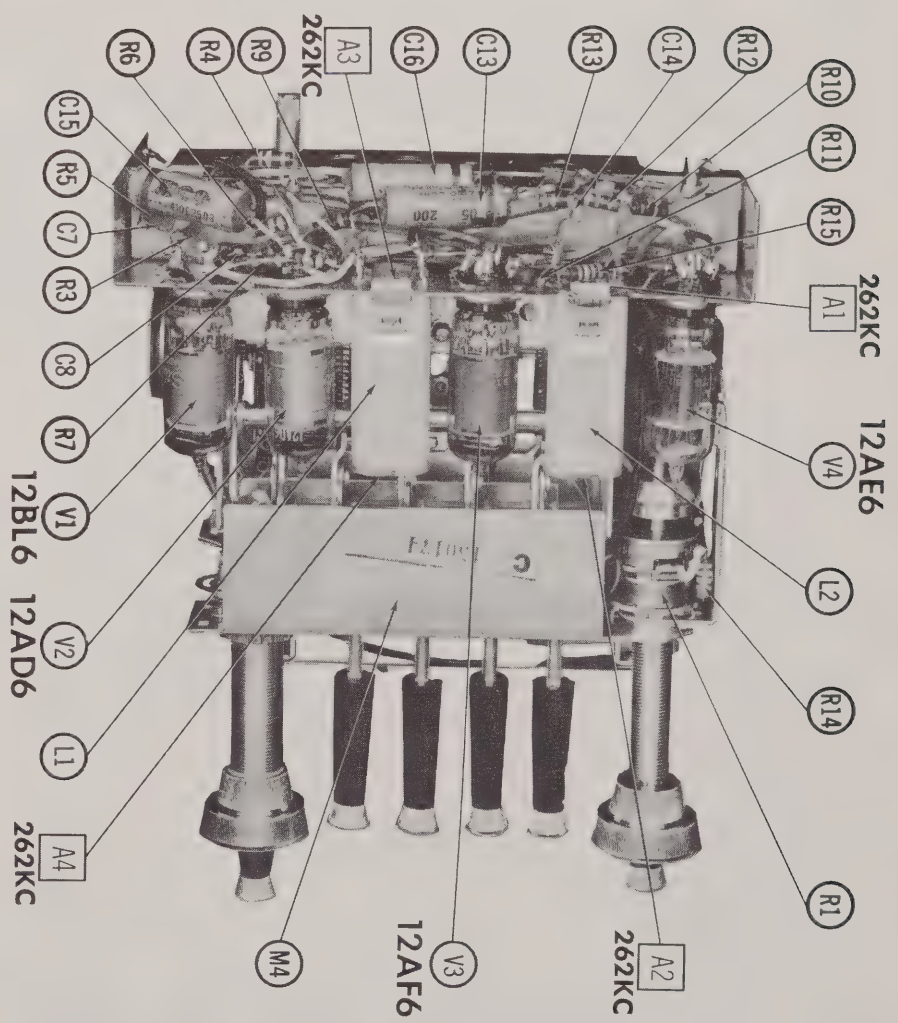
ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	ALLSTATE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C4	90		T19-1-1							
C5	15-160		T19-175-0							
C6	150		T17-15119	1469-00015	DD-151	22R5T15	ED-150		MS-315	10%
C7	10000		T15-10317	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C8	6.8		T15-689131	NPO-SI 6.8	TCZ-6R8	C10V68C	TC0-6.8	ZT-5568	5TCCB-V68	NP0
C9	18-140		T19-177-0							
C10	390		T17-39119	1469-00039		5R5T39	ED-390		MS-339	10%
C11	125-250		T19-178-0							
C12	47		T15-47016	N750-SI 47	TCN-47	C10Q47U	TC7-47	NT-5447	5TCU-Q47	N750
C13	.05	200	T16-50323	BPD-05	DF-503	CUB2S5		GEM-415	2TM-S5	
C14	27		T15-27016	SI 27	D6-270	L10Q27	ED-27	UC-5427		
C15	.05	200	T16-50323	BPD-05	DF-503	CUB2S5		GEM-415	2TM-S5	
C16	.05	200	T16-50323	BPD-05	DF-503	CUB2S5		GEM-415	2TM-S5	
C17	.01	200	T16-10323	BPD-01	DD-103	CUB2S1	GP-10000	GEM-211	2TM-S1	
C18	.01	200	T16-10323	BPD-01	DD-103	CUB2S1	GP-10000	GEM-211	2TM-S1	
C19	.01	200	T16-10323	BPD-01	DD-103	CUB2S1	GP-10000	GEM-211	2TM-S1	
C20	.05	200	T16-50323	BPD-05	DF-503	CUB2S5		GEM-415	2TM-S5	Note 1
C21	.05	200	T16-50323	BPD-05	DF-503	CUB2S5		GEM-415	2TM-S5	
C22	.25	100	T20-41-1	P288N-25		CUB2P25		GEM-4025	2TM-P25	
C23	.5	100	T20-21-1	P288N-5		CUB2P5		GEM-405	2TM-P5	

Note 1. Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	ALLSTATE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	500K		T24-249					Tone
B	250K							Volume, Tap @ 125K
C	Switch							

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ALLSTATE PART No.	IRC PART No.	
C2	220K		T60-22401	BTS-220K	
C3	220K		T60-22401	BTS-220K	
C4	3900Ω		T60-39201	BTS-3900	
C5	10Ω		T60-10001	BTS-10	
C6	470Ω		T60-47101	BTS-470	
C7	1Meg		T60-10501	BTS-1Meg	
C8	47K		T60-47301	BTS-47K	
C9	680Ω		T60-68101	BTS-680	
C10	2.7Meg		T60-27501	BTS-2.7Meg	
C11	56Ω		T60-56001	BTS-56	
C12	4.7Meg		T60-47501	BTS-4.7Meg	
C13	3.3Meg		T60-33501	BTS-3.3Meg	
C14	39K		T60-39301	BTS-39K	
C15	39K		T60-39301	BTS-39K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	ALLSTATE PART No.	IRC PART No.	
C16	2.2Meg		T60-22501	BTS-2.2Meg	
C17	10K		T60-10301	BTS-10K	
C18	10Ω		T60-10001	BTS-10	
C19	120Ω		T60-12101	BTS-120	
C20	150Ω		T60-15101	BTS-150	
C21	1000Ω		T60-10201	BTS-1000	
C22	1000Ω		T60-10201	BTS-1000	
C23	1000Ω		T60-10201	BTS-1000	
C24	1.2Ω 5%		T60-12901		Note 1
C25	1.2Ω 5%		T60-12901		Note 1
C26	1.2Ω 5%		T60-12901		Note 2
C27	1.2Ω 5%		T60-12901		Note 2
C28	10Ω		T60-10001	BTS-10Ω	Note 3
C29	10Ω		T60-10001	BTS-10Ω	Note 3

Note 1. R24 & R25 may be replaced by a .56Ω resistor (part #T60-56801).
Note 2. R26 & R27 may be replaced by a .56Ω resistor (part #T60-56801).
Note 3. R28 & R29 may be replaced by a 5.6Ω resistor (part #T60-56901).
Chassis 528.62681 & 528.62691 replace R28 & R29 with 82Ω (part #T60-82001) & 6Ω temp. compensation (part #61-116) connected in parallel.

TRANSFORMER (INPUT)

ITEM No.	Turns Ratio		REPLACEMENT DATA						NOTES
	PRI.	SEC.	ALLSTATE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	20:	1	T80-431	G2002		A-4705	20All ①		① Drill one new mounting hole.

TRANSFORMER (DRIVER)

ITEM No.	Turns Ratio		REPLACEMENT DATA						NOTES
	PRI.	SEC.	ALLSTATE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	1.5:	1	T80-422						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	ALLSTATE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T3	2I.25Ω	3-4Ω	T80-421						

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	ALLSTATE PART No.	QUAM PART No.	
SP1	6"X9"	PM	3-4Ω	T79-508 ①		① Not used in some versions
	7'	PM	3-4Ω	T79-509 ①		

COILS (RF-IF)

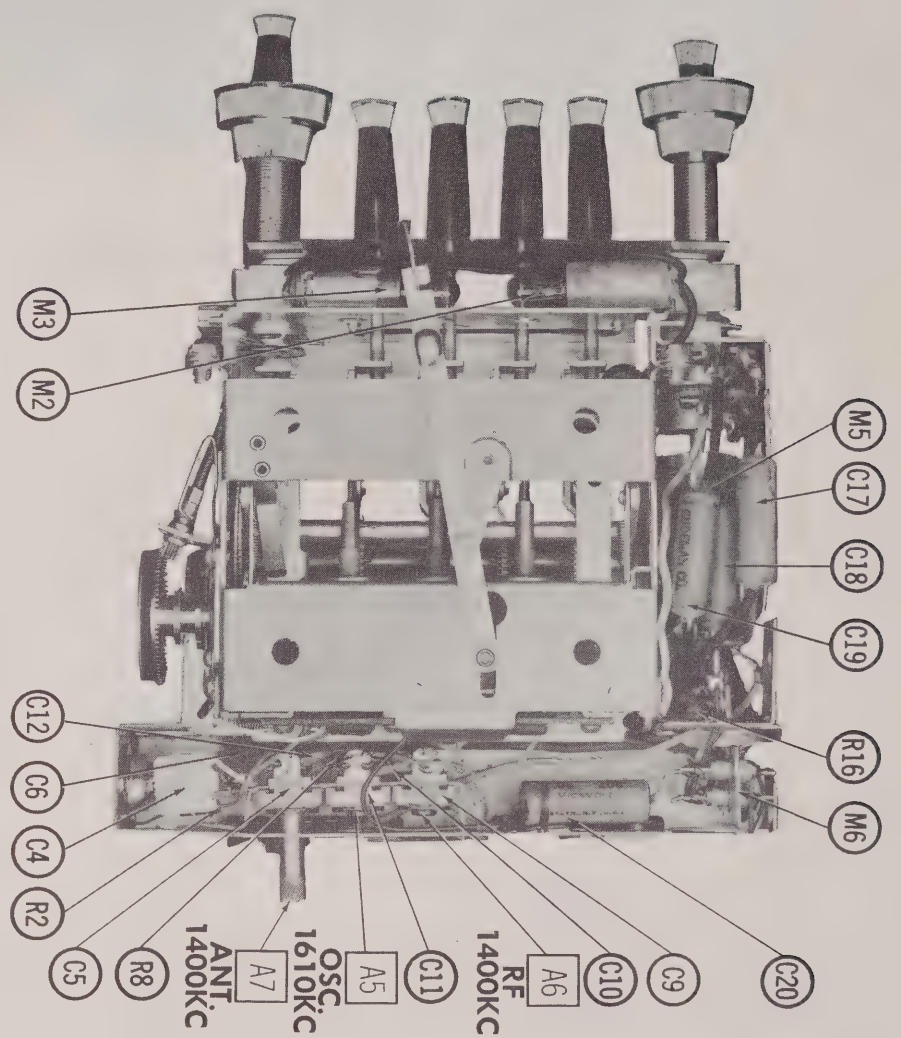
ITEM No.	USE	REPLACEMENT DATA				NOTES
		ALLSTATE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Input IF	T10-47-2	16-6752	BC-350	12-H1	
L2	Output	T10-48-2	16-6754	BC-351	12-H6	
L3	"A" Lead Choke	T80-419				.9 Millihenry

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	ALLSTATE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L4	.135A	.6Ω	7 Millihenries	A80-419 ①					

① Alternate Part #T33-234

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

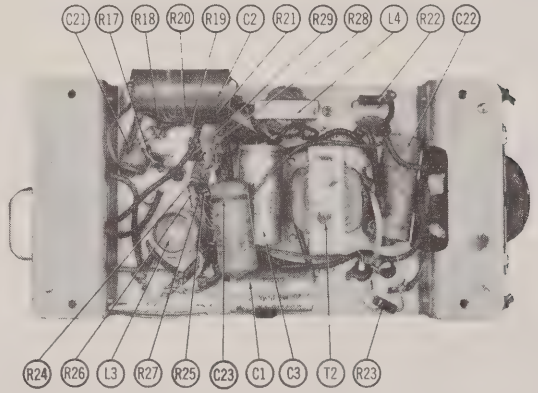
FUSE

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			ALLSTATE PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	7AG	15 Amp.	T43-27	T84-2754	303015. (7AG-15A)	155009		HRH

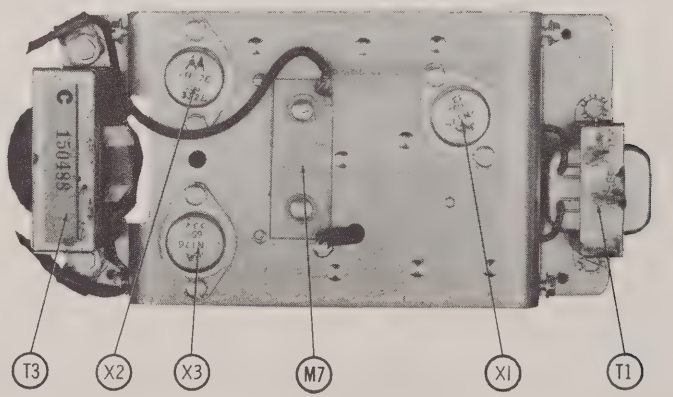
MISCELLANEOUS

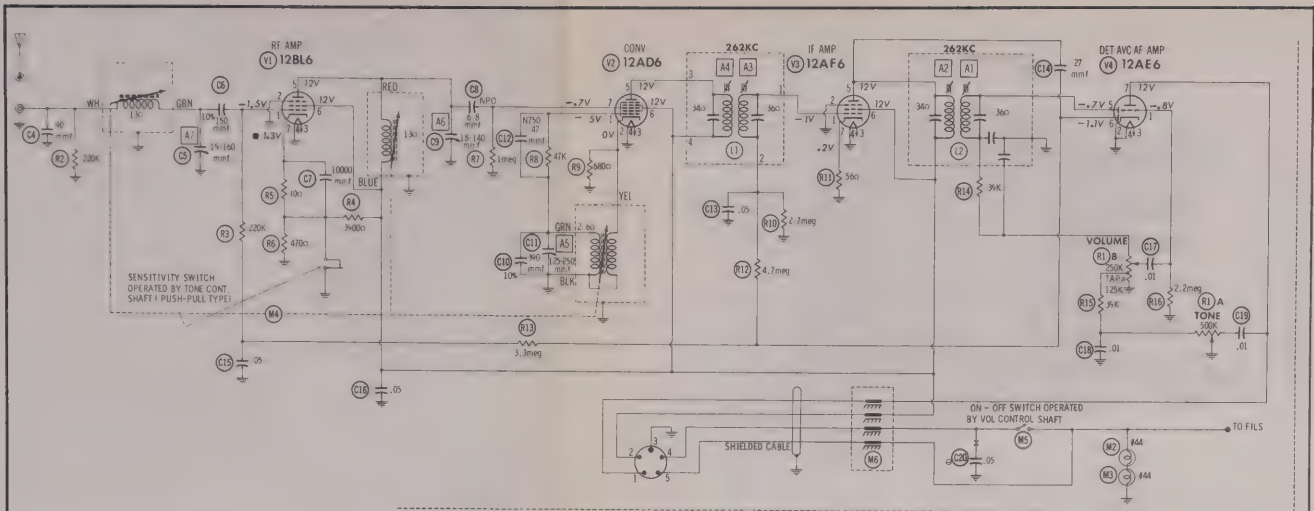
ITEM No.	PART NAME	ALLSTATE PART No.	NOTES
M2	Dial Light	T89-18	#44
M3	Dial Light	T89-18	#44
M4	Tuner	T84-2215	Complete Assy.
M5	Switch		ON-OFF
M6	Spark Plate	T84-3139	Includes Power Cable
M7	Spark Plate	T11-1000	
	Knob	T52-656	Tuning (Manual)
	Knob	T52-654	Tone
	Knob	T52-690	On-Off-Volume & Local-Distant Switch
	Dial Scale	T67-613	Upright
	Dial Scale	T67-612	Inverted
	Dial Pointer	T58-119	
	Cover	T21-20-0	Rear
	Cover	T21-243	Tube

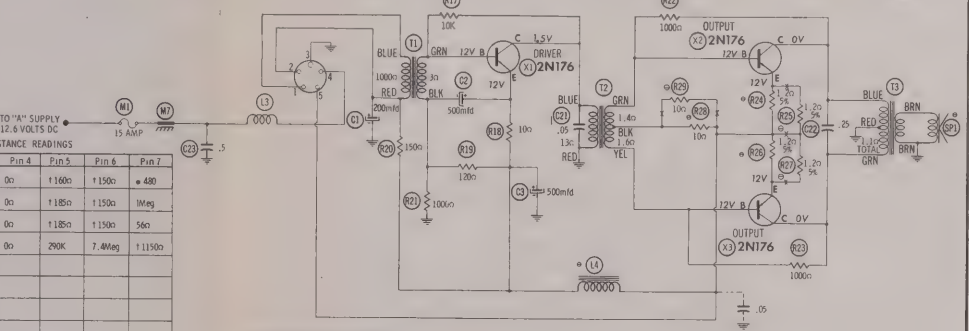
OUTPUT CHASSIS BOTTOM VIEW



OUTPUT CHASSIS TOP VIEW







1. DC voltage measurements taken with vacuum tube voltmeter ; AC voltages measured at 1000 ohms per volt.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BL6	11Meg	0Ω	1.3Ω	0Ω	↑160Ω	↑150Ω	• 480
V2	12AD6	47K	.8Ω	1.3Ω	0Ω	↑185Ω	↑150Ω	1Meg
V3	12AF6	2.7Meg	0Ω	1.3Ω	0Ω	↑185Ω	↑150Ω	56Ω
V4	12AE6	2.2Meg	0Ω	1.3Ω	0Ω	290K	7.4Meg	↑1150Ω
	Type	Base	Collector	Emitter				
X1	2N176	↑120Ω	13Ω	↑10Ω				
X2	2N176	↑6.5Ω	.6Ω	↑.7Ω				
X3	2N176	↑6.5Ω	.5Ω	↑.7Ω				

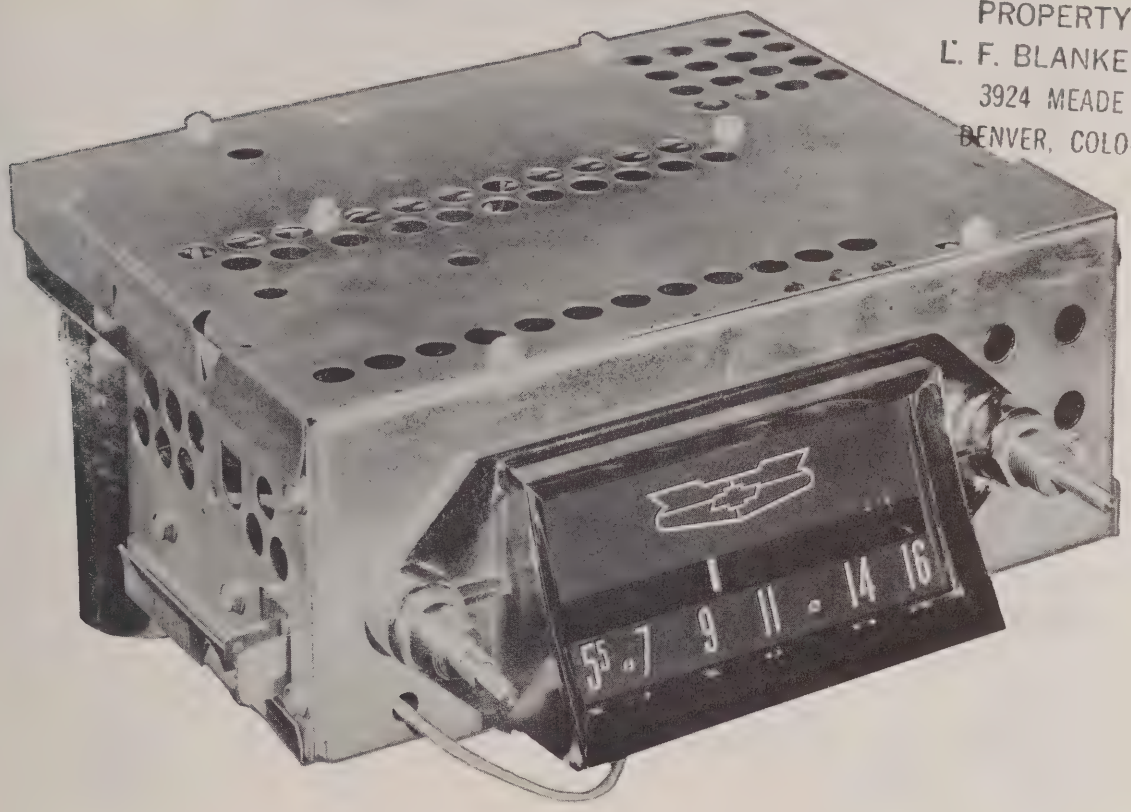
• MEASURED WITH SENSITIVITY SWITCH OPEN
↑ MEASURED FROM JUNCTION OF C23 AND L3
TRANSISTORS REMOVED FOR RESISTANCE READINGS.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



CHEVROLET
MODEL 987573

TRADE NAME	Chevrolet Model 987573 (For 1957 Chevrolet Automobiles)
MANUFACTURER	Delco Radio Div., G. M. Corp., Kokomo, Indiana
TYPE SET	Battery Operated Custom Built AM Automobile Receiver
TUBES (Six)	Types 12BA6 RF Amplifier, 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 12V6GT Output, 0Z4 Rectifier
POWER SUPPLY	12 Volt Storage Battery — RATING 2.6 Amp. @ 12.6 Volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. Tone control to Treble.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1MFD	High side to pin 7 (grid) of 12BE6 (V2). Low side to chassis.	262KC (400∿ Mod.)	High frequency end of dial	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
	If necessary, adjust oscillator coil core so that core is 1 5/8" from mounting end of coil form.						
2	68MMF	High side to antenna receptacle. Low side to chassis.	1615KC	"	"	A5, A6 A7	Adjust for maximum output.
3	"	"	600KC	Tune to 600KC signal	"	A9, A10	"
4	"	"	1615KC	High frequency end of dial	"	A6, A7	"
5	"	"	900KC	Tune to 900KC signal	"		If necessary, adjust dial pointer on dial cord to coincide with 1100KC.
6	With radio installed in car and antenna fully extended, tune in a weak station between 600KC and 1000KC, adjust A7 for maximum volume.						

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

CHEVROLET
MODEL 987573

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	12BA6	
V2	Converter	12BE6	
V3	IF Amplifier	12BA6	

ITEM No.	USE	TYPE	NOTES
V4	Det.-AVC-AF Amp.	12AV6	
V5	Output	12V6GT	
V6	Rectifier	0Z4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	DELCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲20	400	6309	AFH2-51	B0400	FP234	TMD-50	D-215	TVL-2755
B	■20	400							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	DELCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2A	20-120		7269193							
B	140									
C3	.047	200	6612	BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	
C4	15		6361	BPD-000015	DD-150	L10Q15	ED-15	UC-5415	5GA-Q15	
C5A			7268828							
B										
C										
D										
C6	39		6366	SI 39	DD-390	L10Q39	ED-39	UC-5439	5GA-Q39	
C7	200		7268904							N150
C8	.047	400	6612	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C9	2000		6352	BPD-002	DD-202	BYA10D2	ED-002	DC522	5HK-D2	
C10	.01	400	6610	BPD-01	DD-103	CUB4S1	GP-10000	GEM-411	4TM-S1	
C11	1000		6350	BPD-001	DD-102	BYA6D1	ED-1000	DC521	5HK-D1	
C12	.047	400	6612	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C13	.006	800	6566	P1088N-006	DD16-602	CUB16D6		GEM-1626	MB-D6	
C14	.007	1600	6567	P1688N-007	DD16-702	CUB16D7		GEM-1627	MB-D7	
C15	.1	200	6690	P288N-1	DF-104	CUB2P1		GEM-401	2TM-P1	
C16	.47	100	6692	P288N-47		CUB2P47		GEM-4047	2TM-P47	
C17	.1	200	6690	P288N-1	DF-104	CUB2P1		GEM-401	2TM-P1	Note 1

Note 1. Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	DELCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	2Meg	1/2	1220962				UE1773S	Tone
B	330K	1/2						Volume
C	Switch							

RESISTORS

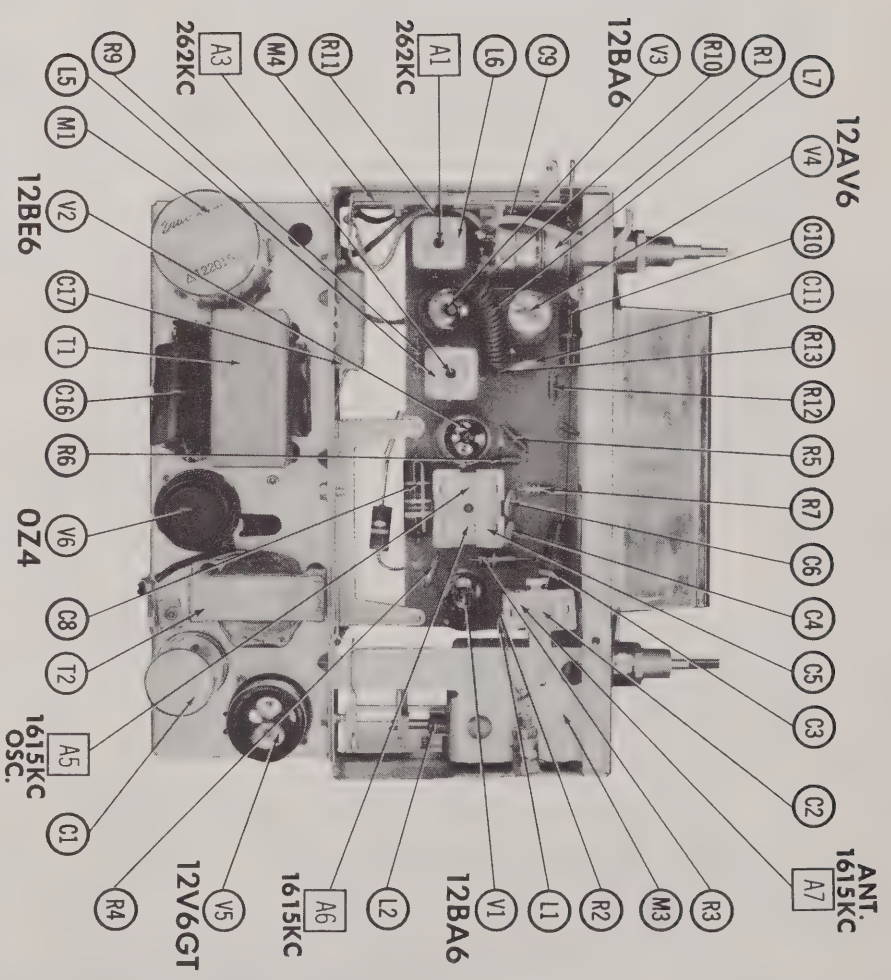
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	DELCO PART No.	IRC PART No.	
R2	2.2Meg		1239	BTS-2.2Meg	
R3	10K	1	1174	BTA-10K	
R4	150Ω		1115	BTS-150	
R5	22K		1215	BTS-22K	
R6	100Ω			BTS-100	Note 1
R7	330K		1229	BTS-330K	
R8	15K	2	1277	BTB-15K	
R9	330Ω		1119	BTS-330	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	DELCO PART No.	IRC PART No.	
R10	1Meg		1235	BTS-1Meg	
R11	47K		1219	BTS-47K	
R12	6.8Meg		1245	BTS-6.8Meg	
R13	220K		1227	BTS-220K	
R14	220K		1227	BTS-220K	
R15	330Ω	1	1156	BTA-330	
R16	15K	1	1253	BTA-15K	
R17	1800Ω	4			Note 2

Note 1. Not used in some versions
Note 2. Mfgr. states to replace R17 with 2700Ω 2W (Part #1204) & 5600Ω 1W (Part #1171) connected in parallel.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	SEC. 3	DELCO PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	12.6VCT @ 1.8A	530VCT @ .052A			7265604		P-2860 ①		22R79 ①	

① Fabricate mounting.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	DELCO PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	4800Ω	3-4Ω	6062	Z1002 ①	A-3019 ①	A-3823 ①	26S49 ①	S-5Z ①	① Fabricate mounting

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	DELCO PART No.	QUAM PART No.	
SP1	6"X9"	PM	3-4Ω	6112	69A2	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		DELCO PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coupling Coil	7255738	19-1004	BC-565	4610	6.5 Microhenry
L2	Antenna Coil	1221050				
L3	RF Coil	1221050				
L4	Osc. Coil	1221051				
L5	Input IF	1220990	16-6756	BC-317		
L6	Output IF	1220992		BC-320		
L7	Fil. Choke	1217846				1.4 Microhenry
L8	"A" Supply Choke	7269090				42 Microhenries

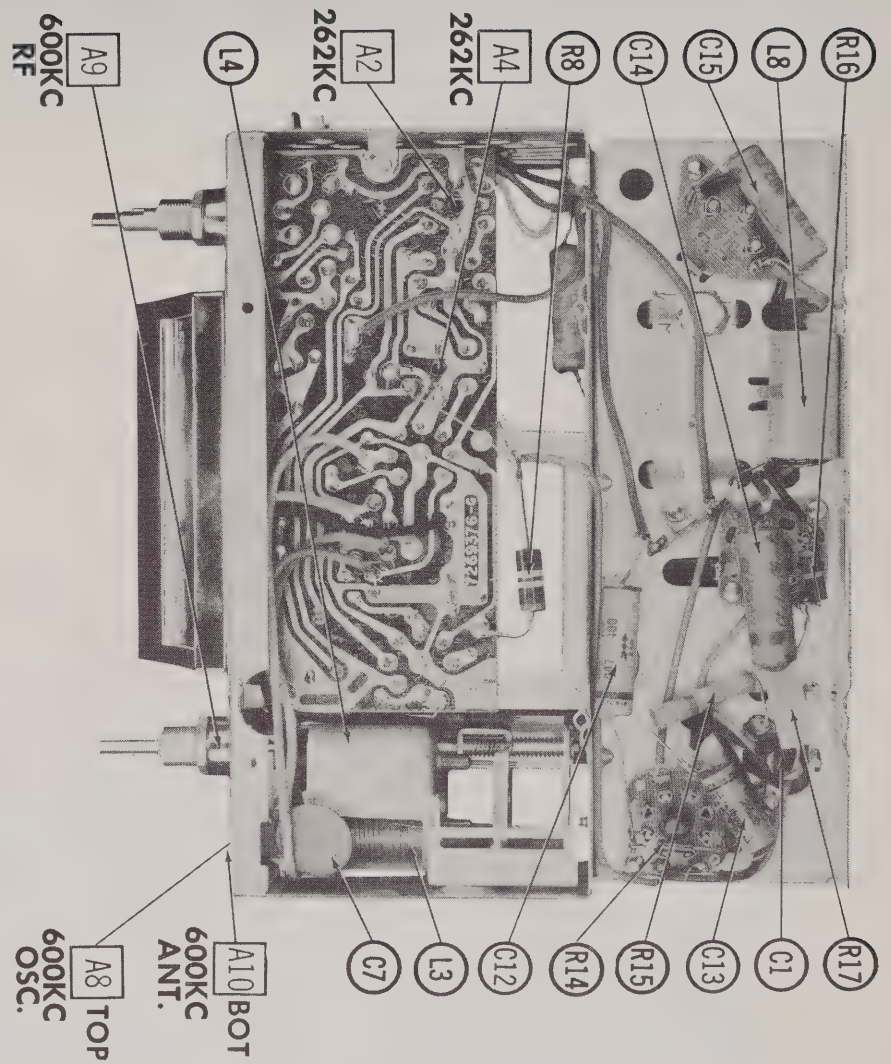
VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FRE-QUENCY	REPLACEMENT DATA				NOTES
				DELCO PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	RADIART PART No.	
M1	Interrupter	12.6V	115∿	8555	6330	G1602/G883	6330	

MISCELLANEOUS

ITEM No.	PART NAME	DELCO PART No.	NOTES
M2	Dial Light		#1891
M3	Tuner		
M4	Spark Plate	1220885	Dual Unit
	Knob	7268744	Tone, Dummy
	Knob	1990863	Tuning
	Knob	1990864	On-Off-Volume
	Pointer Assy.	7269221	

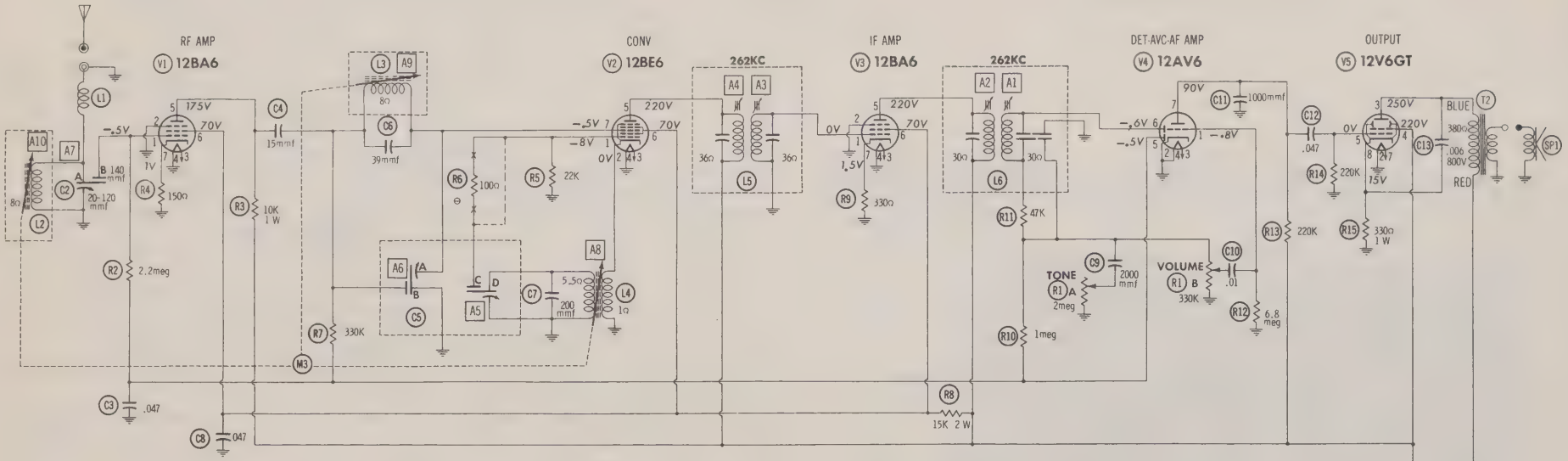
CHASSIS—BOTTOM VIEW

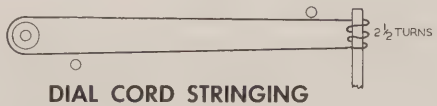


SET 365 FOLDER 4

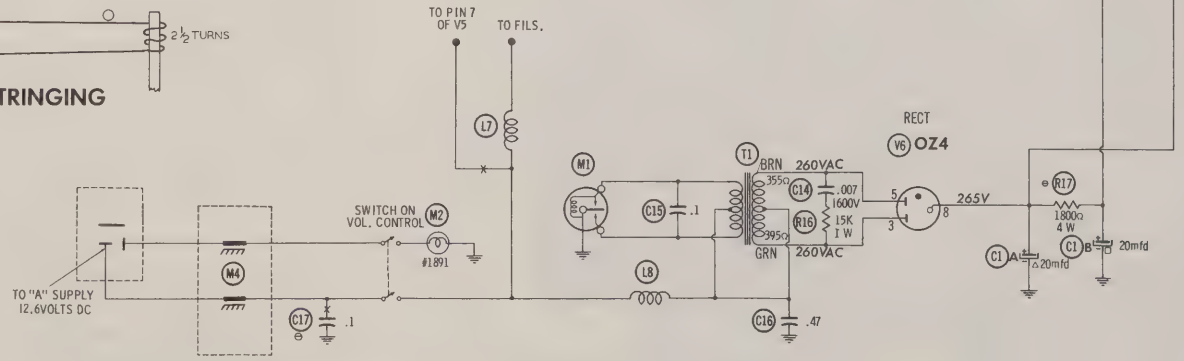
CHEVROLET MODEL 987573

CHEVROLET MODEL 987573





DIAL CORD STRINGING



⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

RESISTANCE READINGS

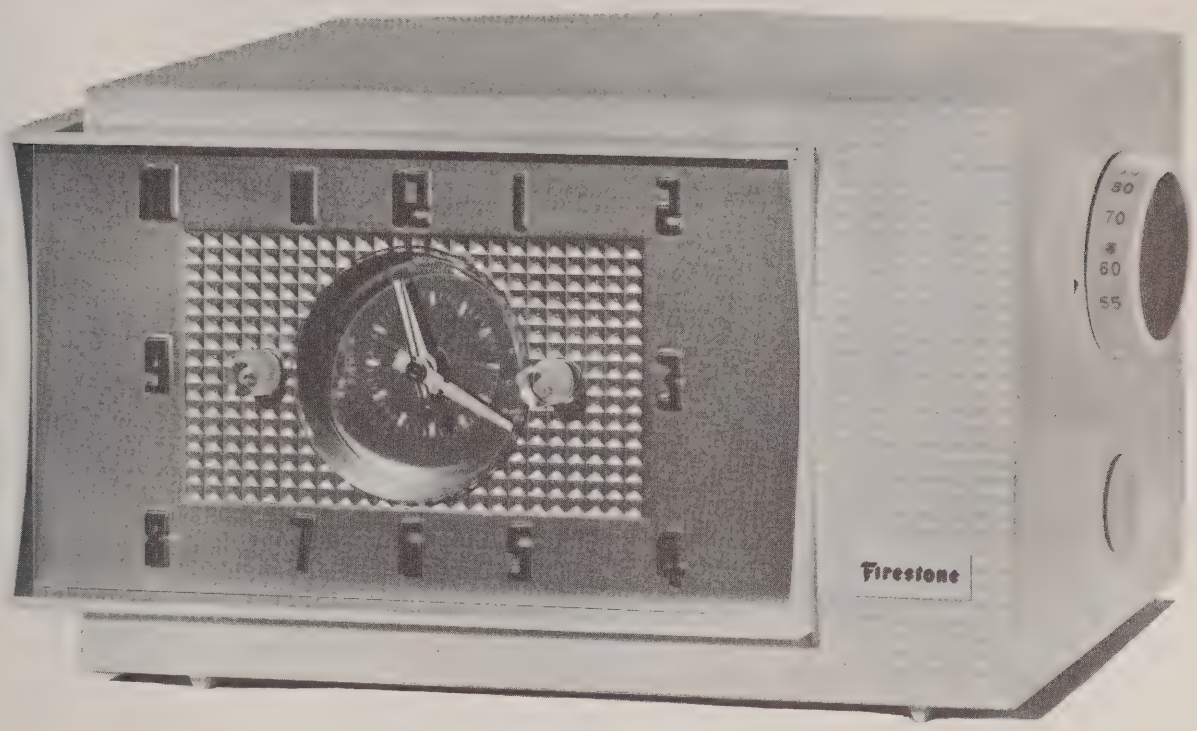
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	12BA6	3.5Meg	0Ω	2.2Ω	0Ω	† 12K	†17K	150Ω	
V2	12BE6	22K	1Ω	2.2Ω	0Ω	†1800Ω	† 17K	1.5Meg	
V3	12BA6	36Ω	0Ω	2.2Ω	0Ω	†1800Ω	† 17K	330Ω	
V4	12AV6	6.8Meg	0Ω	2.2Ω	0Ω	1.3Meg	380K	†220K	
V5	12V6GT	NC	0Ω	†380Ω	†1800Ω	220K	TP	2.2Ω	330Ω
V6	0Z4	TP	NC	395Ω	NC	355Ω	NC	TP	20K(Min)

† MEASURED FROM PIN 8 OF V6
NC NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 12.6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

FIRESTONE
MODEL 4-A-164 (Code 297-6-582)



FIRESTONE
MODEL 4-A-164 (Code 297-6-582)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

TRADE NAME	Firestone Model 4-A-164 (Code 297-6-582)
SUPPLIER	Firestone Tire & Rubber Co., 1200 Firestone Parkway, Akron, Ohio
TYPE SET	AC Operated AM Receiver With Electric Clock
TUBES (Five)	Types 12BE6 Converter, 12BA6 IF Amplifier, 12AV6 Det.-AVC-AF Amp., 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC-60 Cycles
RATING	.3 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535KC-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to antenna stator lug on tuning gang. Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001 MFD to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune to 1400KC signal.	"	A6	"

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Converter	12BE6	
V2	IF Amplifier	12BA6	
V3	Det. -AVC-AF Amplifier	12AV6	
V4	Output	50C5	
V5	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	FIRESTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	50	150	R-1781	PRS150V3050	BBRD5315	TCD497	TDLD-8	FMD-301	TVA-2450
B	30	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							
	CAP.	VOLT	FIRESTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.047	200	R-1462	BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	
C3	.047	200	R-1462	BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	
C4	.047	200	R-1462	BPD-05	DF-503	CUB2S47		GEM-4147	2TM-S47	
C5	10000		N-9062	BPD-01	DD-103	BYA6S1	GP-10000	DC511	5HK-S1	
C6	10000		N-9062	BPD-01	DD-103	BYA6S1	GP-10000	DC511	5HK-S1	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	FIRESTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1Meg	½	R-1847	AB-744 *	A47-1Meg-Z*	Q13-137*	U53 *	Volume, 47K Stop
B	Shaft			AK-4	KSS-3	Not Req.	Not Req.	

* Connect 47K Resistor In Series With Right Hand Terminal Viewed From Front Of Control, Terminals Down.

RESISTORS

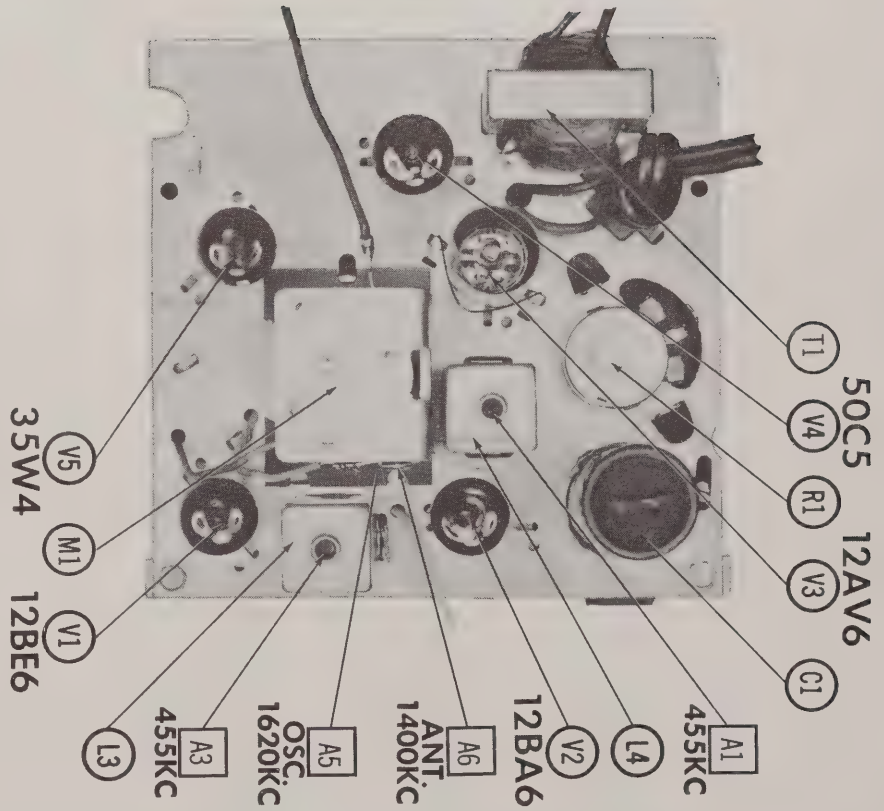
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	FIRESTONE PART No.	IRC PART No.	
R2	22K		N-4025	BTS-22K	
R3	100Ω		N-1615	BTS-100	
R4	1Meg		N-1262	BTS-1Meg	
R5	180Ω		N-4067	BTS-180	
R6	1200Ω	1	N-4900	BTA-1200	
R7	22Ω		N-4633	BTS-22	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	FIRESTONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2700Ω	3-4Ω	R-1841	Z1101 ①	A-3025 ①	A-3332 ①	26S58 ①	S-12X ①	① Bend Mounting Feet Down

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	FIRESTONE PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	R-1478	4A07	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		FIRESTONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Loop	R-2018				Includes cabinet back
L2	Osc. Coil	R-1777				197 Microhenries
L3	Input IF	R-1234				Alternate Part No. R-1237
L4	Output IF	R-1234				Alternate Part No. R-1237

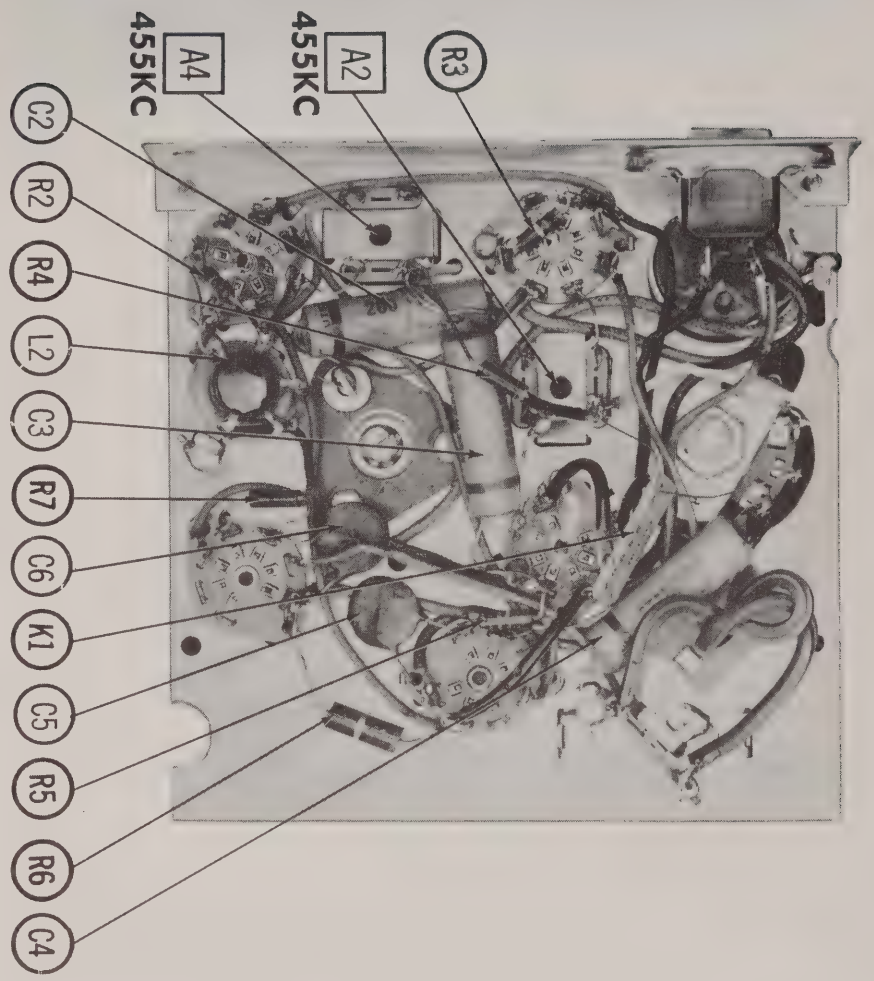
COMPONENT COMBINATIONS

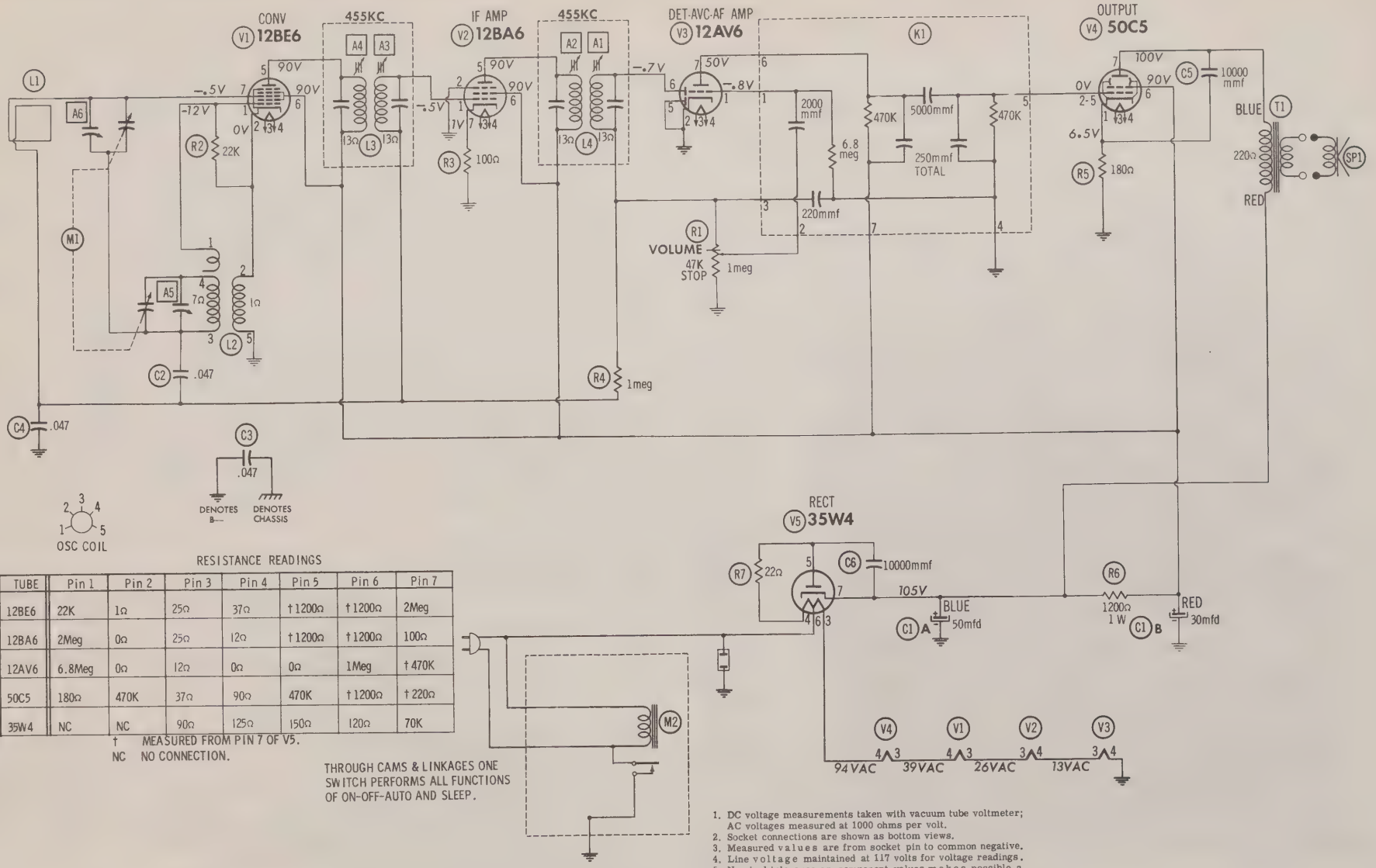
ITEM No.	USE	DESCRIPTION	FIRESTONE PART No.	REPLACEMENT DATA
K1	Det. - Audio Net	2000MMF, 5000MMF, 220MMF, 250MMF, 6.8Meg, 470K, 470K	R-1487	Aerovox PA113-1 Centralab PC-150 Cornell-Dubilier 116TM1 Erie 1408-01 Sprague DT-5

MISCELLANEOUS

ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M1	Tuning Cap.	R-1779	2 Gang (15-250MMF, 27-125MMF)
M2	Clock	R-2012	
	Crystal	R-1860	Clock
	Knob	N-9784	Clock, Clear
	Knob	R-2022	Volume, Ivory
	Knob	R-2150	Volume, Pink
	Knob	R-2024	Tuning, Ivory
	Knob	R-2025	Tuning, Pink
	Cabinet	#582	Ivory
	Cabinet	#583	Pink & Ebony

CHASSIS—BOTTOM VIEW





RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	1Ω	25Ω	37Ω	†1200Ω	†1200Ω	2Meg
V2	12BA6	2Meg	0Ω	25Ω	12Ω	†1200Ω	†1200Ω	100Ω
V3	12AV6	6.8Meg	0Ω	12Ω	0Ω	0Ω	1Meg	†470K
V4	50C5	180Ω	470K	37Ω	90Ω	470K	†1200Ω	†220Ω
V5	35W4	NC	NC	90Ω	125Ω	150Ω	120Ω	70K

† MEASURED FROM PIN 7 OF V5.
NC NO CONNECTION.

THROUGH CAMS & LINKAGES ONE SWITCH PERFORMS ALL FUNCTIONS OF ON-OFF-AUTO AND SLEEP.

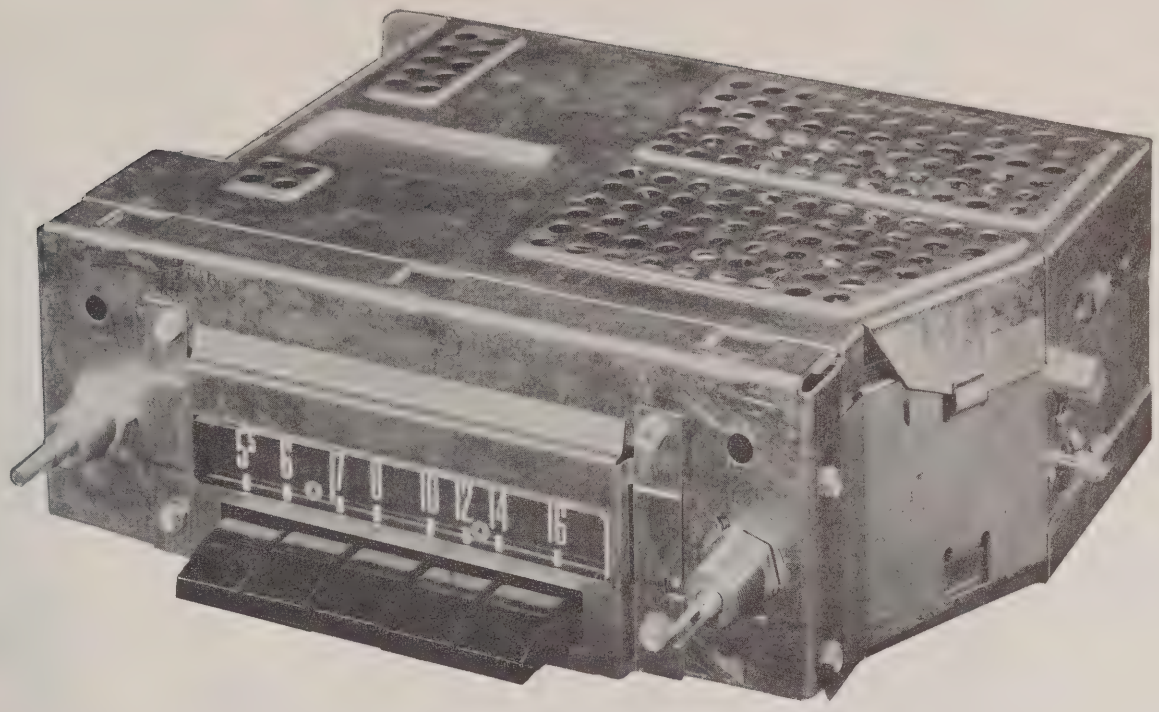
1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1957

FORD
MODEL 75BF (FEG-18805-B)



TRADE NAME	Ford Model 75BF (FEG-18805-B) (For 1957 Ford Automobiles)
MANUFACTURER	Bendix Radio, Div. of Bendix Aviation Corp., Baltimore 4, MD.
TYPE SET	Battery Operated Custom Built AM Automobile Receiver With Transistorized Output
TUBES (Five)	Types 12AF6 RF Amplifier, 12AD6 Converter, 12AF6 1st. IF Amplifier, 12CN5 (or) 12AF5 2nd. IF Amplifier, 12J8 Det. -AVC-AF Amp.
POWER SUPPLY	12Volt Storage Battery — RATING 2 Amp. @ 12.6 Volts DC
TUNING RANGE—BROADCAST	540KC-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. Tone control to high.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1	.1MFD	High side to pin 7 (grid) of 12AD6 (V2). Low side to chassis.	262.5KC (400%Mod.)	High frequency end stop	Across voice coil (DO NOT DISCONNECT SPEAKER)	A1, A2, A3, A4	Adjust for maximum output.
2	Fig. 1	Thru dummy to antenna receptacle.	1605KC	"	"	A5, A6, A7	"
	The following steps are not necessary unless tuner cores have been tampered with or replaced. BACK TUNING cores A8, A9, A10 OUT OF COILS BUT NOT OUT OF COIL FORMS.						
3	Fig. 1	Thru dummy to antenna receptacle.	1605KC	High frequency end stop	Across voice coil	A5, A6, A7	Adjust for maximum output.
4	"	"	1000KC	Back carriage $\frac{1}{2}$" from high frequency end stop	"	A8, A9, A10	Adjust for maximum output. Repeat steps 3 & 4 until no further increase is noted.
	With radio installed in car and antenna fully extended, tune in a weak station near 1400KC, adjust A7 for maximum volume.						

PUSHBUTTON ADJUSTMENT

1. Tune to desired station.
2. Pull pushbutton out.
3. Press pushbutton in firmly.
4. Repeat on remaining pushbuttons.

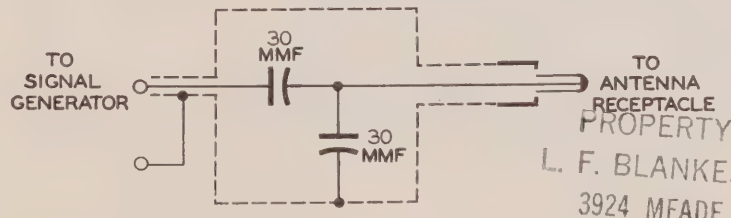
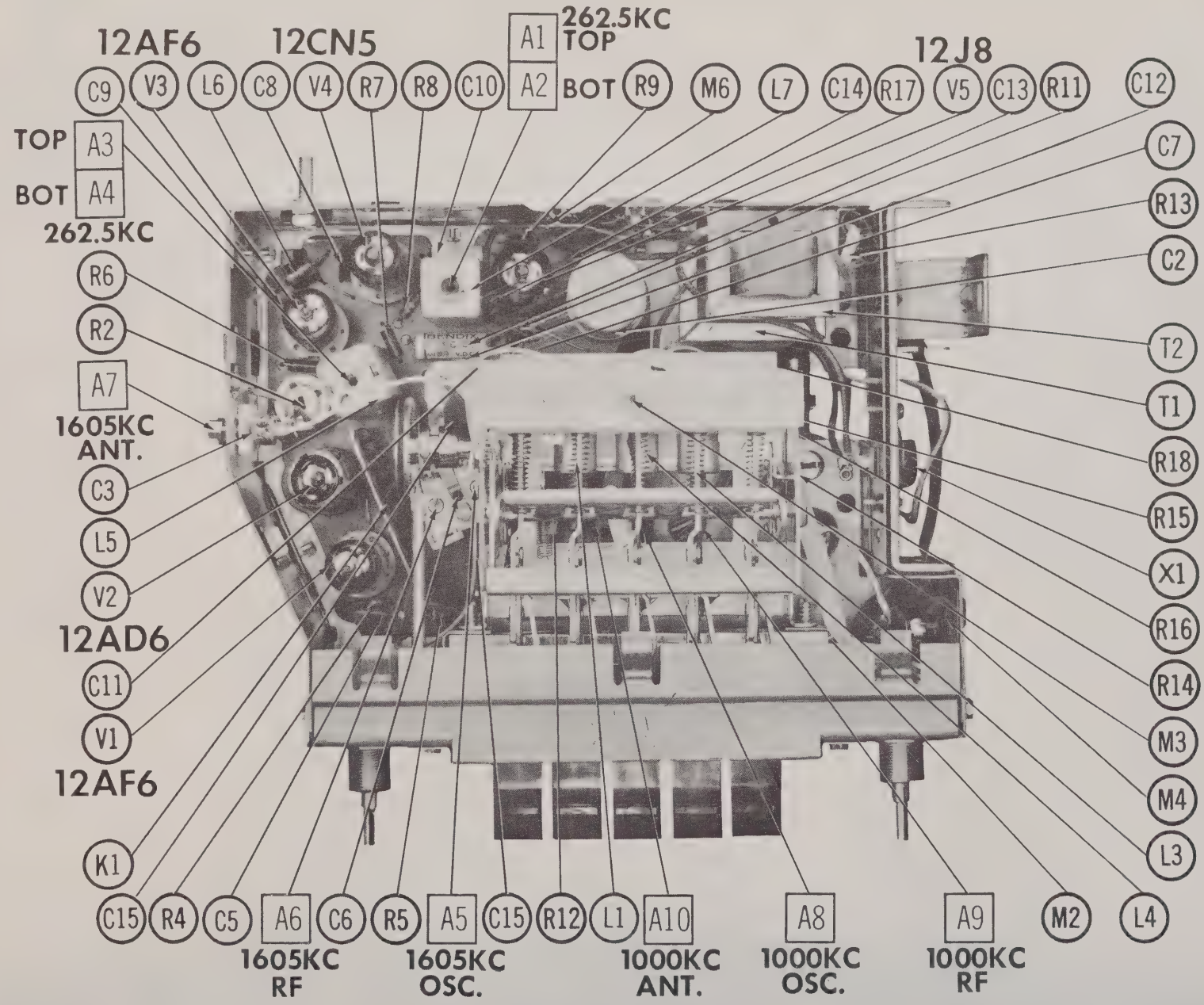


FIG. 1

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



CHASSIS TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	12AF6	
V2	Converter	12AD6	
V3	1st. IF Amplifier	12AF6	

ITEM No.	USE	TYPE	NOTES
V4	2nd. IF Amplifier	12CN5	Note 1
V5	Det. -AVC-AF Amp.	12T8	

Note 1. Some versions may use 12AF5 in this application.

TRANSISTORS

ITEM No.	USE	BENDIX Part No.	NOTES
X1	Output (2N155)	2090056-1	

ITEM No.	USE	TYPE	NOTES

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	BENDIX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	500	3	2090031-2	PRS6V500	BR500-6	TC305	TD-500-6	MTH-0650	TVA-1103
C2A	■250	16	220353-2	AFH2-05-25					R2389 *
B	▲250	16							

* Non catalog item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

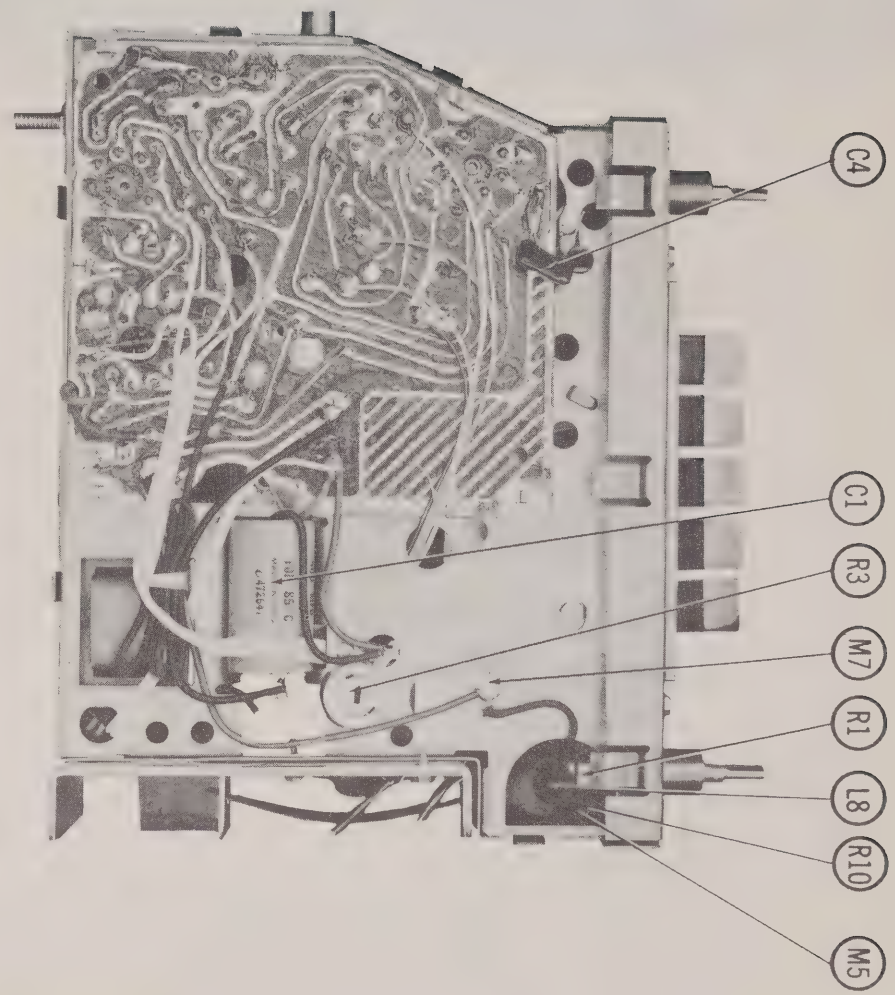
ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	BENDIX PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	4-75		219083-1							
C4	150		220350-501	NP0-SI 150	TCZ-150	C10T15C	TC0-150	ZT-5315	5TCC-T15	NP0
C5	68		2090058E-680N							N150
C6A	120-450									
B	100		219092-2							
C	370-445									
C7	.1	100	220352-3	P288N-1	DF-104	CUB2P1		GEM-401	2TM-P1	
C8	2000			BPD-002	DD-202	BYA10D2	ED-002	DC522	5HK-D2	Note 1
C9	82		220332-9		TCN-82	C10Q82U	TC7-82			N750
C10	100		220333-2	SI 100	D6-101	LT6T1	GP-100	UC-531	5GA-T1	
C11	.0082	100	220352-4	P288N-008		CUB16D8		GEM-6282	6TM-D8	
C12	.1	100	220352-3	P288N-1	DF-104	CUB2P1		GEM-401	2TM-P1	
C13	.0082	100	220352-4	P288N-008		CUB16D8		GEM-6282	6TM-D8	
C14	5000			BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	Note 2
C15	.1	100	220352-3	P288N-1	DF-104	CUB2P1		GEM-401	2TM-P1	

Note 1. Some versions use 1000MMF (Part #220332-8) in this application.
Note 2. Some versions use .002MF (Part #220332-10) in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	BENDIX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1Meg	1/3	2090035-1				UE1584S	Tone
B	1Meg							Volume, Tap ⓐ 300K
C	Switch							
R2	3000Ω	2	219682-1					Sensitivity (Wire Wound)
R3	600Ω	2	219555-14					Emitter Bias, Stop ⓐ 150Ω (Wire Wound)

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	BENDIX PART No.	IRC PART No.	
R4	3.3Meg		220604B-335	BTS-3.3Meg	
R5	680K		220604B-684	BTS-680K	
R6	10Meg		220604B-106	BTS-10Meg	
R7	2.2Meg		220604B-225	BTS-2.2Meg	
R8	68K		220604B-683	BTS-68K	
R9	2.2Meg		220604B-225	BTS-2.2Meg	
R10	47K		220603B-473	BTS-47K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	BENDIX PART No.	IRC PART No.	
R11	15Meg		220604B-156	BTS-15Meg	
R12	47Ω		220604B-470	BTS-47	
R13			220629-3		Note 1
R14	1Ω		2090050-5		Note 2
R15	1.5Ω		2090050-4		Note 2
R16	82Ω		220603B-820	BTS-82	
R17	270Ω			BTS-270	Note 3
R18	10Ω				Note 3

Note 1. Special temp. compensating unit, 28Ω @ 25°C.
Note 2. Length of wire.
Note 3. Not used in some versions.

TRANSFORMER (DRIVER)

ITEM No.	Turns Ratio		REPLACEMENT DATA						NOTES
	PRI.	SEC.	BENDIX PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	15:	1	2090037-1					A-3X ①	① Drill new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	BENDIX PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	8Ω	3-4Ω	2090038-1 ①						① Autoformer Type

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	BENDIX PART No.	QUAM PART No.	
SP1	6"X9"	PM	3-4Ω	L22081-1 ①	69A2	① Alternate Part #282634-3

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		BENDIX PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	Ant. Coil					Note 1
L2	RF Choke	215818-7	19-7047 ■		6110 ■	55 Microhenries, wound on 18K
L3	RF Coil		•			Note 1
L4	Osc. Coil					Note 1
L5	Input IF	291791-3				
L6	RF Choke	216154-3				3 Millihenries, wound on 15K

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (cont)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		BENDIX PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L7	Output IF	2090108-1				
L8	Fil. Choke	216188-11				130 Microhenries

Note 1. Part of complete tuner coil assembly, part #2090131-1 (RCC) or 2090131-2(OAK)
■ Parallel with 18K resistor

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	BENDIX PART No.	REPLACEMENT DATA
K1	Converter Circuit	100MMF, 220MMF, 47MMF, 15Meg, 22Meg, 100Ω, 1500Ω, 33Meg, 33K	2090100-1	Erie 712

FUSES

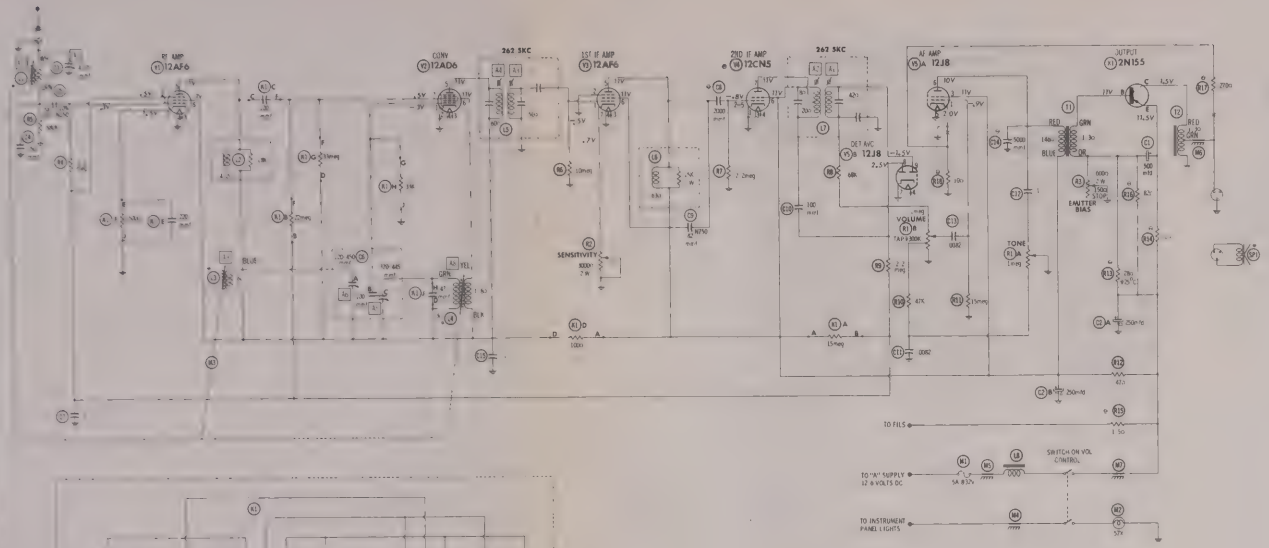
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			BENDIX PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	1AG	5A 32V.	AGA-5	221633-6	301005. (1AG5A)	155004	AGA5	HRF

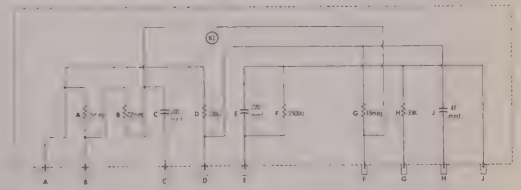
MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
M2	Dial Light	57X	#57X
M3	Tuner	221470-1	Complete Assy.
M4	Spark Plate	220267-14	185MMF
M5	Spark Plate	220267-14	185MMF
M6	Spark Plate	220267-9	200MMF
M7	Spark Plate	220267-12	300MMF
	Printed Panel	2090125-1	
	Bezel	2090008-1	
	Knob	2090016-1	Tuning, Volume
	Knob	2090007-1	Tone (2 Used)
	Cover	691513-1	Top
	Cover	694308-1	Bottom

TRANSISTOR EMITTER BIAS ADJUSTMENT (R3)

With a voltmeter connected R14, turn on the receiver and adjust R3 for a reading of .42 volts DC. This indicates an emitter current of .42 amperes, the maximum safe value.





@ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AF6	1 Meg	11 Meg	1 Ω	0Ω	* 1 kΩ	* 150Ω	150Ω		
V2	12AD6	33K	0Ω	1 Ω	0Ω	* 200Ω	* 150Ω	17 meg		
V3	12AF6	1 Meg	0Ω	1 Ω	0Ω	* 100Ω	* 50Ω	75Ω		
V4	12CN5	0Ω	2 .2 Meg	0Ω	1 Ω	2 .2 Meg	* 50Ω	* 50Ω		
V5	12J8	1 Meg	10Ω	* 50Ω	1 Ω	0Ω	* 1 kΩ	0Ω	1 Meg	1 Meg
	Type	Base	Emitter	Collector						
X1	2N155	• 30Ω	• 1Ω	• 2Ω						

* MEASURED FROM POSITIVE TERMINAL OF C2A
• RESISTANCE MEASURED WITH TRANSISTOR REMOVED FROM CIRCUIT

1. DC voltage measurements taken with vacuum tube voltmeter, AC voltages measured at 1000 ohms per volt
2. Socket connections shown as bottom views
3. Measured values are from socket pin to common negative
4. Battery voltage maintained at 12.6 volts for voltage readings
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings
6. Volume control at maximum, no signal applied for voltage measurements

© Howard W. Sams & Co., Inc. 1957

HAMILTON MODEL W-30

HAMILTON MODEL W-30

HAMILTON MODEL W-30

TRADE NAME	Hamilton Model W-30
MANUFACTURER	Hamilton Electronics Corp., 2726 Pratt Ave., Chicago 45, Ill.
TYPE SET	AC Operated 3 Channel Audio Amplifier
TUBES (Seven)	Types 6AU6 Mic Preamp., 6AU6 Mic Preamp., 6AU6 AF Amp., 6SN7GTB AF Amp.-Phase Inv., (2) 6L6GB Output, 5U4 GB Rectifier
POWER SUPPLY	105-125 Volts AC-60 Cycles RATING 1 Amp. @ 117 Volts AC (110 Watts)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

HAMILTON MODEL W-30

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Mic. Preamp.	6AU6	
V2	Mic. Preamp.	6AU6	
V3	AF Amplifier	6AU6	
V4	AF Amp. -Phase Inv.	6SN7GTB	

ITEM No.	USE	TYPE	NOTES
V5	Output	6L6GB	
V6	Output	6L6GB	
V7	Rectifier	5U4GB	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA HAMILTON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	30	525	①		BR6035 BR6035				R2413 *
C2A	■20	450		AFH3-129	C0990	FP345.8	TMT-106	T-665	TVL-3739
B	▲20	450							
C	20	25							
C3A	■15	400		AFH2-43	B0380	FP258	TMD-41	D-180	TVL-2660
B	▲15	400							
C4	5	50		PRS50V5	BBR5-50	TC30	TD-5-50	FM-1504	TVA-1303

① Some versions may use 20MFD and 10MFD in parallel.
* Non catalog item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

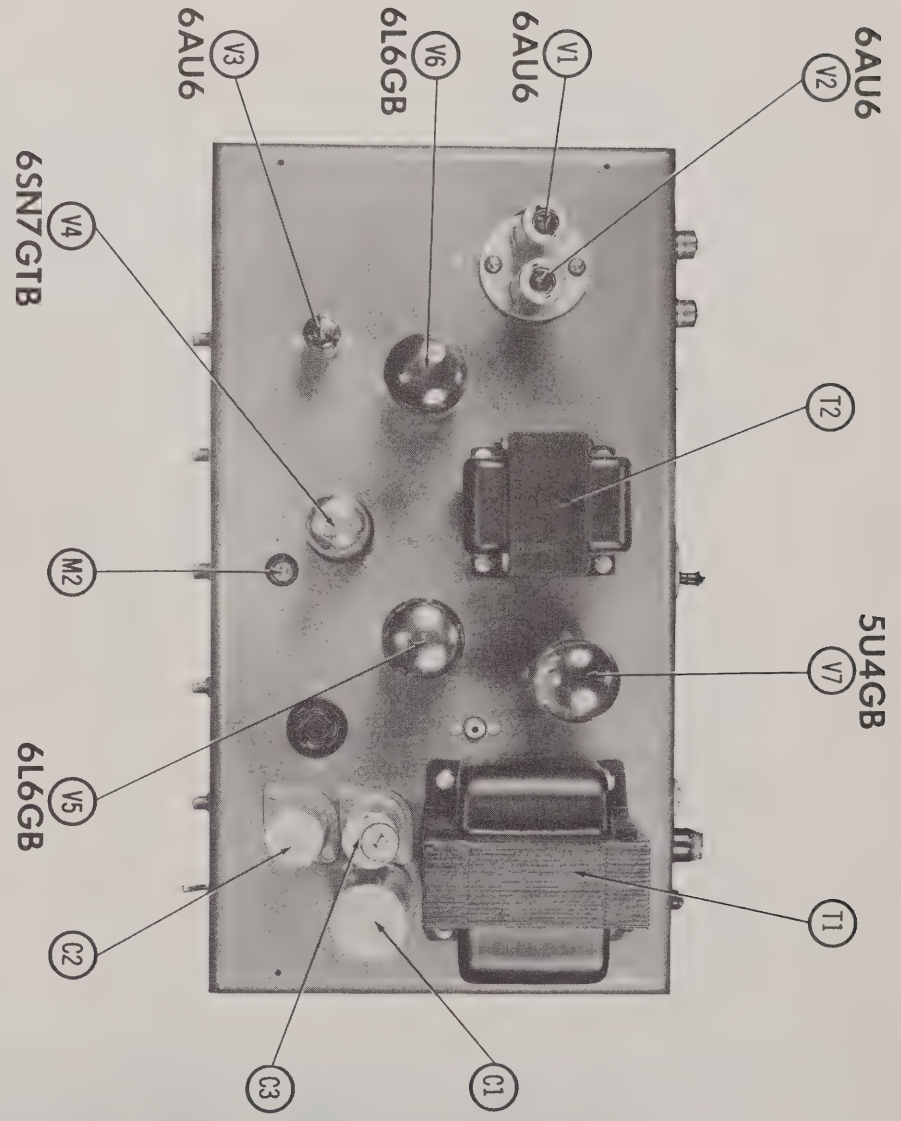
ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA HAMILTON PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C6	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C7	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C8	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C9	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C10	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C11	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C12	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C13	510			1464-00051		5R5T51			MS-351	5%
C14	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C15	5000	3000								
C16	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C17	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C18	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA HAMILTON PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	75B13-6	B-59	A47-500K-S	Q11-133	U50	Microphone Volume
B	Shaft			Not req.	KSS-3	Not req.	Not req.	
R2A	500K	½	75B13-6	B-59	A47-500K-S	Q11-133	U50	Microphone Volume
B	Shaft			Not req.	KSS-3	Not req.	Not req.	
R3A	500K	½	75B13-6	B-59	A47-500K-S	Q11-133	U50	Phono Volume
B	Shaft			Not req.	KSS-3	Not req.	Not req.	
R4A	500K	½	75B13-6	B-59	A47-500K-S	Q11-133	U50	Treble
B	Shaft			Not req.	KSS-3	Not req.	Not req.	
R5A	500K	½	75B13-6	B-59	A47-500K-S	Q11-133	U50	Bass Note 1
B	Shaft			Not req.	KSS-3	Not req.	Not req.	

Note 1. Bass control may be 2.5Meg in some versions.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	HAMILTON PART No.	IRC PART No.	
R6	10Meg			BTS-10Meg	
R7	270K			BTS-270K	
R8	1.2Meg			BTS-1.2Meg	
R9	10Meg			BTS-10Meg	
R10	270K			BTS-270K	
R11	1.2Meg			BTS-1.2Meg	
R12	270K			BTS-270K	
R13	270K			BTS-270K	
R14	56K			BTS-56K	Note 1
R15	470K			BTS-470K	
R16	1500Ω	1		BTA-1500	
R17	270K			BTS-270K	
R18	20K			BTS-20K	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	HAMILTON PART No.	IRC PART No.	
R19	2Meg			BTS-2Meg	
R20	56K			BTS-56K	
R21	1000Ω			BTS-1000	
R22	4700Ω	1		BTA-4700	
R23	56K			BTS-56K	
R24	100K			BTS-100K	
R25	100K			BTS-100K	
R26	20K	10		1 3/4 A-20K	
R27	250Ω	7		1 3/4 A-250	
R28	20K			BTS-20K	Note 1
R29	20K			BTS-20K	
R30	20K			BTS-20K	
R31	6K	20		2D-6000	

Note 1. Not used in some versions

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	SEC. 3	HAMILTON PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC ② 1A	800VCT ②.115A	5VAC ② 3A	6.3VCT ② 3.3A	1080	P9316 ①	P-3155 ①	PC8411 ①	24R07U ①	R-18A ①

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	HAMILTON PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5500Ω CT	500Ω Taps ② 500Ω (70V), 15Ω, 8Ω, & 4Ω	1081						

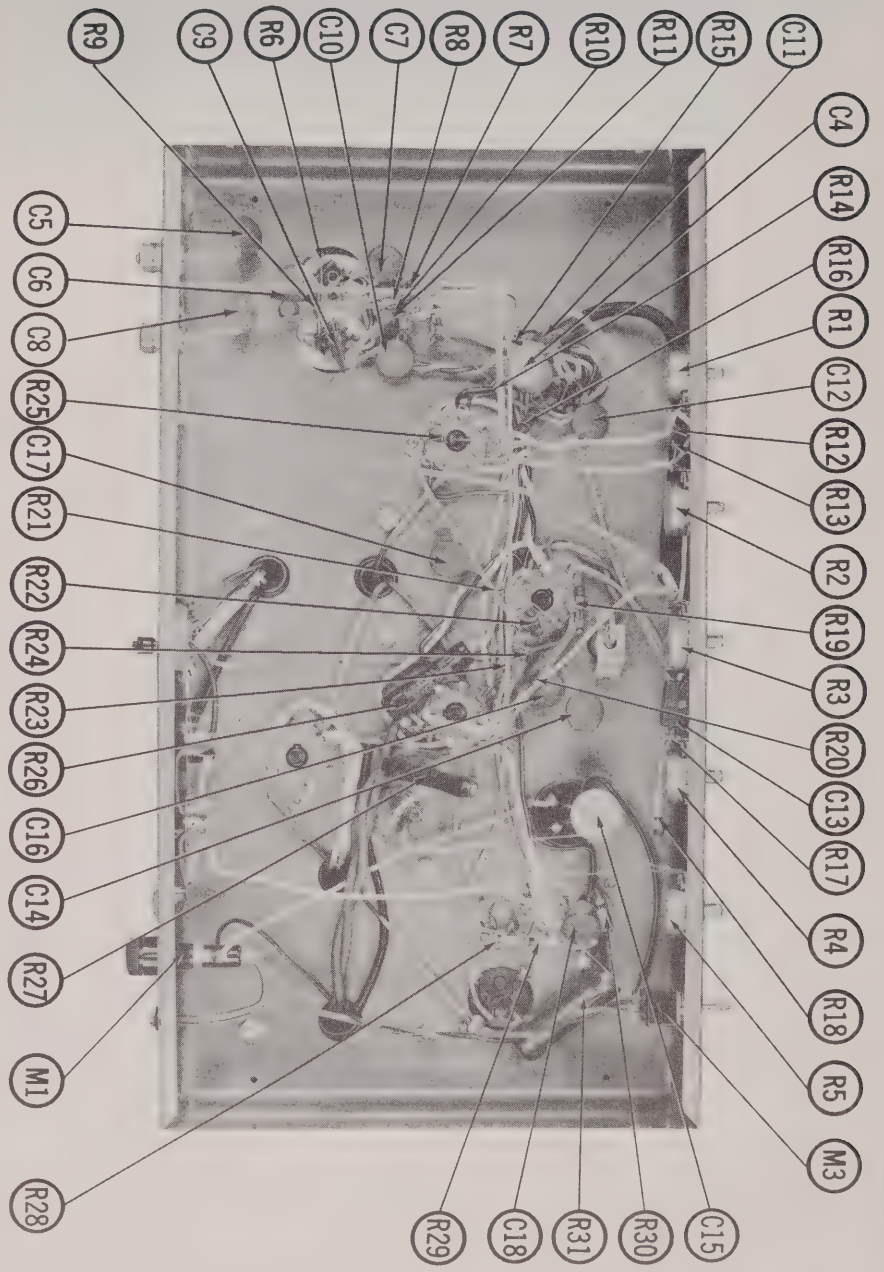
FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			HAMILTON PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	2A 250V			312002. (3AG2A)	342001	AGC2	HKP

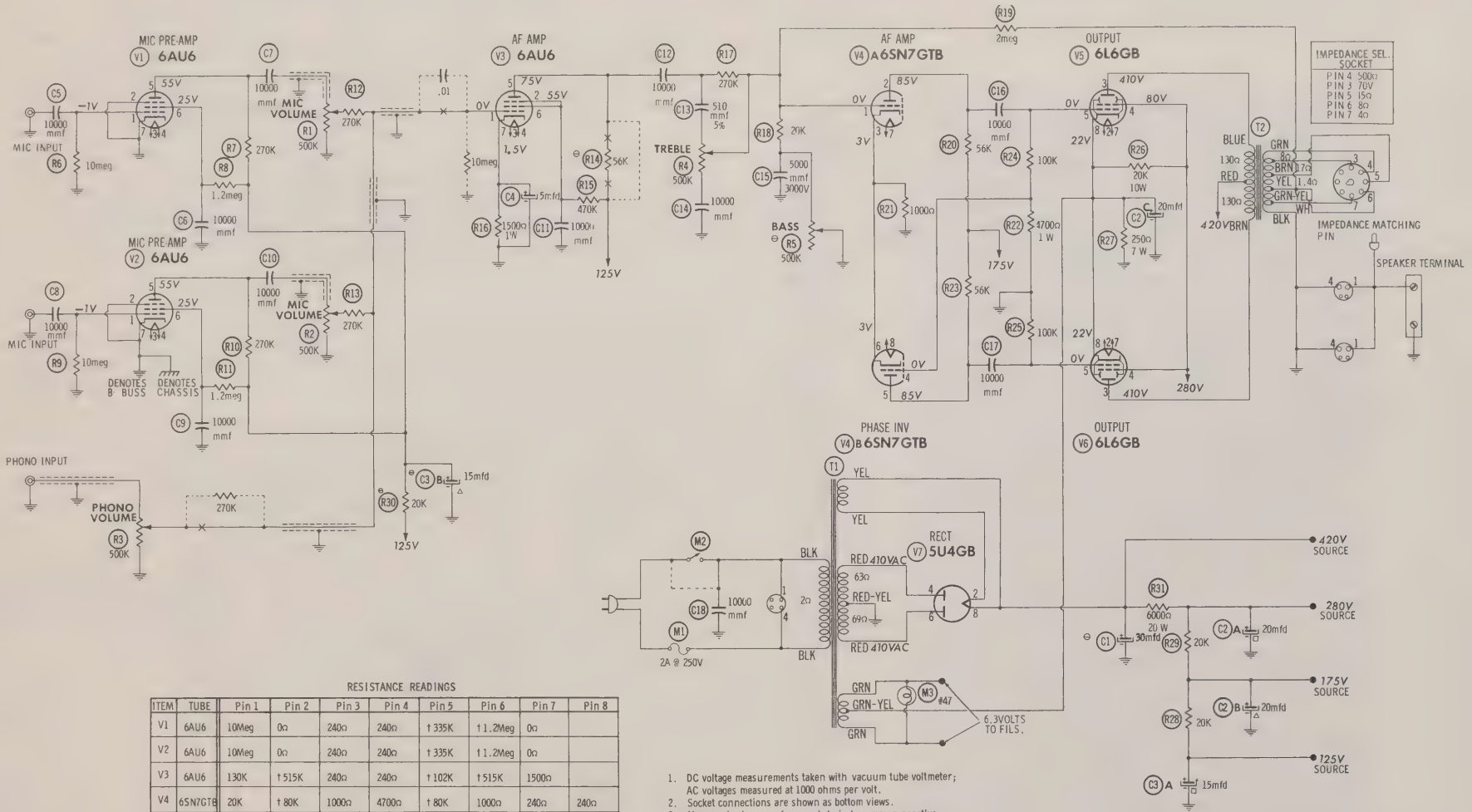
MISCELLANEOUS

ITEM No.	PART NAME	HAMILTON PART No.	NOTES
M2 M3	Pilot Light Switch		#47 On-Off

CHASSIS—BOTTOM VIEW



HAMILTON MODEL W-30



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	6AU6	10Meg	0Ω	240Ω	240Ω	†335K	†1.2Meg	0Ω	
V2	6AU6	10Meg	0Ω	240Ω	240Ω	†335K	†1.2Meg	0Ω	
V3	6AU6	130K	†515K	240Ω	240Ω	†102K	†515K	1500Ω	
V4	6SN7GTB	20K	†80K	1000Ω	4700Ω	†80K	1000Ω	240Ω	240Ω
V5	6L6GB	TP	240Ω	†130Ω	†6000Ω	105K	TP	240Ω	240Ω
V6	6L6GB	TP	240Ω	†130Ω	†6000Ω	100K	TP	240Ω	
V7	5U4GB	NC	20K(Min)	NC	63Ω	NC	69Ω	NC	20K(Min)

† MEASURED FROM PIN 8 OF V7
NC NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

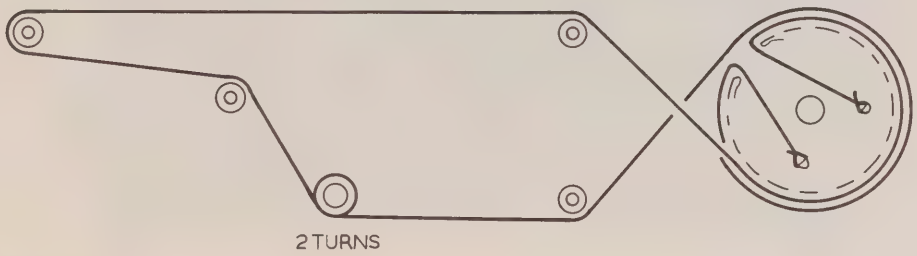
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

RETMA MEMBER
RADIO-ELECTRONICS-TELEVISION MANUFACTURERS ASSOCIATION

HARMAN-KARDON
MODEL TA-120

HARMAN-KARDON
MODEL TA-120

TRADE NAME	Harman-Kardon Model TA-120		
MANUFACTURER	Harman-Kardon, Inc., 521 Main St., Westbury, L.I., N.Y.		
TYPE SET	AC Operated FM-AM Receiver		
TUBES	Fourteen		
POWER SUPPLY	105-125 Volts AC-60 Cycles	RATING	.8 Amp. @ 117 Volts AC
TUNING RANGE - BROADCAST	535KC - 1650KC	FREQ. MOD.	88MC - 108MC



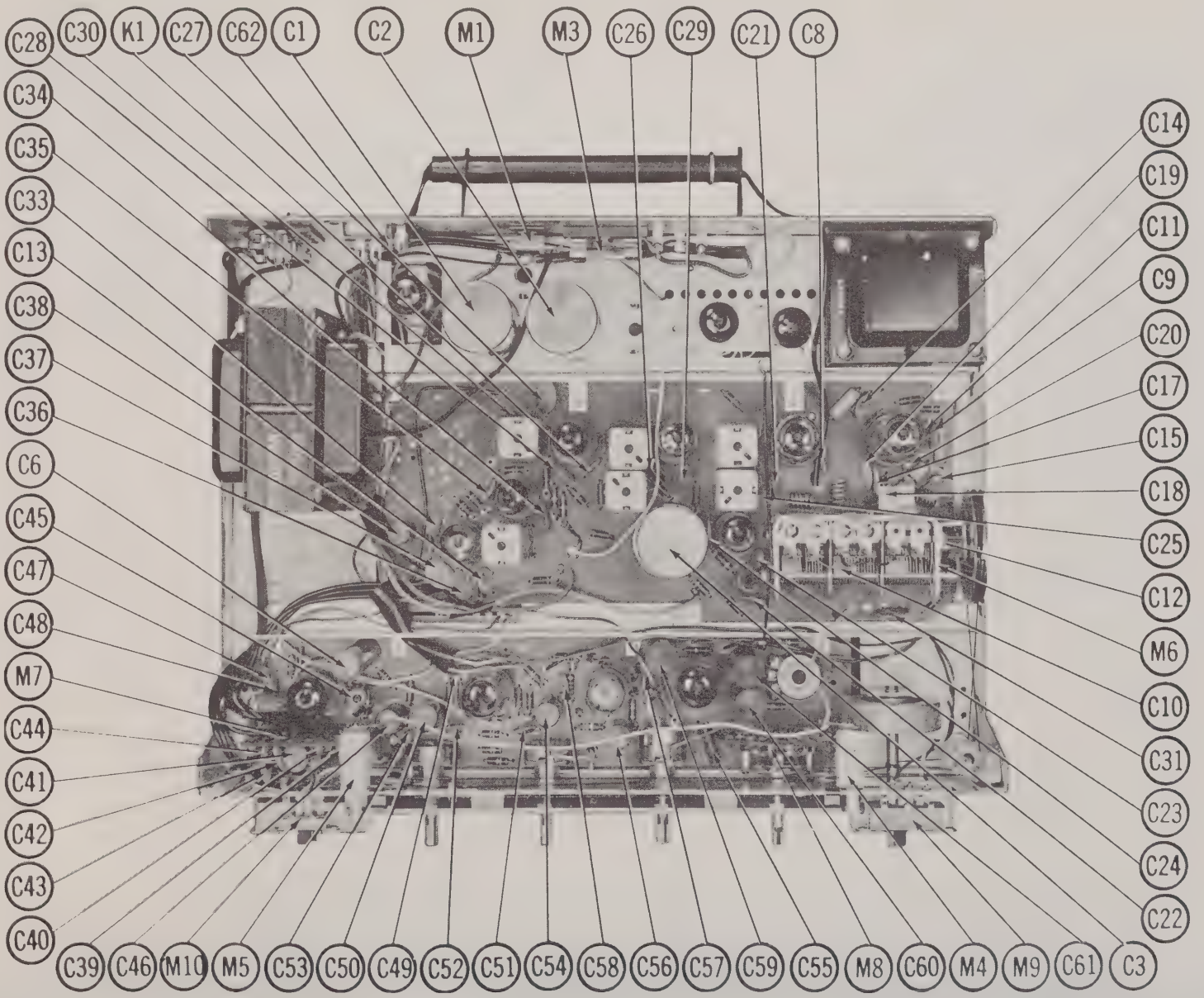
TUNING GANG FULLY CLOSED

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

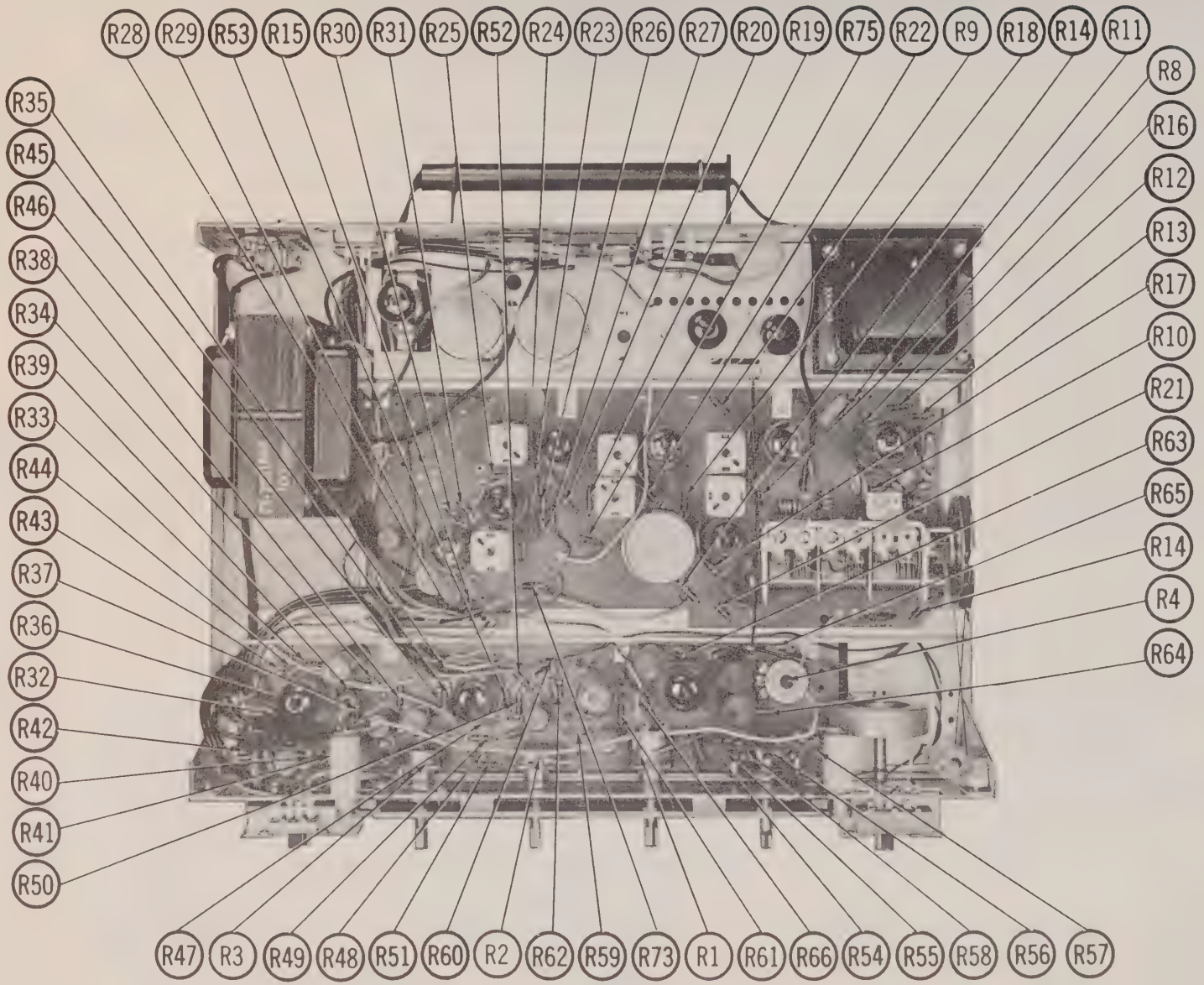
DIAL CORD STRINGING

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



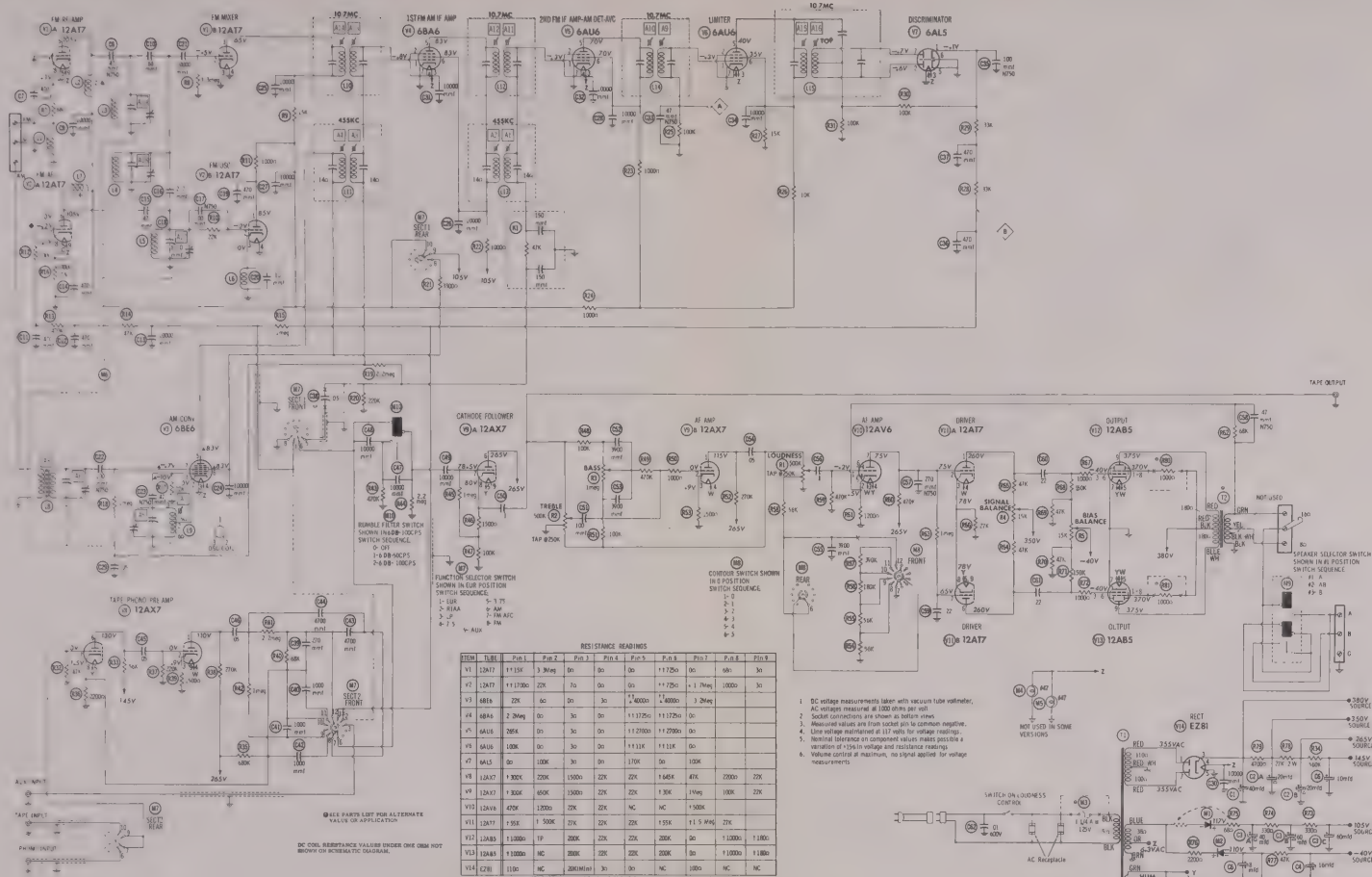
CHASSIS TOP VIEW - CAPACITOR IDENTIFICATION



CHASSIS TOP VIEW - RESISTOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO

HARMAN-KARDON
MODEL TA-120


FM RF AMP V1-A 12AT7
FM MIXER V1-B 12AT7
FM OSC V2-B 12AT7
10.7MC
1ST FM-AM IF AMP V4 6BA6
455KC
2ND FM IF AMP-AM DET-AVC V5 6AU6
LIMITER V6 6AU6
DISCRIMINATOR V7 6AL5
AM CONV V3 6BE6
TAPE PHONO PRE AMP V2 12AX7
CATHODE FOLLOWER V9-A 12AX7
AF AMP V9-B 12AX7
AF AMP V12 12AV6
DRIVER V11-A 12AT7
DRIVER V11-B 12AT7
OUTPUT V13 12AB5
OUTPUT V13 12AB5
RECT V14 EZ81
TAPE OUTPUT
TAPE INPUT
AUX INPUT
SPEAKER SELECTOR SWITCH SHOWN IN #1 POSITION SWITCH SEQUENCE #1 A #2 AB #3 B
NOT USED
RUMBLE FILTER SWITCH SHOWN IN 0 DB-10CPS SWITCH SEQUENCE. 0- OFF 1-9 DB-40CPS 2-6 DB-100CPS
FUNCTION SELECTOR SWITCH SHOWN IN EUR POSITION SWITCH SEQUENCE. 1- EUR 2- RIAA 3- LP 4- 7 5- AUX 6- 78 7- AM 8- AFC 9- FM
CONTOUR SWITCH SHOWN IN 0 POSITION SWITCH SEQUENCE. 1- 0 2- 1 3- 2 4- 3 5- 4 6- 5
LOUDNESS
TREBLE
BASS
SIGNAL BALANCE
BIAS BALANCE
HUM BALANCE
SECT FRONT
SECT REAR
NOT USED IN SOME VERSIONS
SWITCH-ON LOUDNESS CONTROL
AC Receptacle
380V SOURCE
350V SOURCE
265V SOURCE
145V SOURCE
105V SOURCE
-40V SOURCE
6.3VAC
12.6VAC
755VAC
355VAC

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AT7	†† 15K	3.3Meg	0n	0o	0o	†† 75o	0o	68n	3n
V2	12AT7	†† 170o	22K	7o	0o	0n	†† 75o	+ 1.2Meg	100o	3n
V3	6BE6	22K	6o	0n	3o	†† + 4000o	†† 4000o	3.2Meg		
V4	6BA6	2.2Meg	0o	3o	0n	†† 1725o	†† 1725o	0o		
V5	6AU6	285K	0n	3o	0n	†† 2700o	†† 2700o	0o		
V6	6AU6	100K	0o	3o	0n	†† 11K	†† 11K	0o		
V7	6AL5	0o	100K	3n	0n	170K	0o	100K		
V8	12AX7	† 300K	220K	1500o	22K	22K	† 645K	47K	2200o	22K
V9	12AX7	† 300K	650K	1500o	22K	22K	† 30K	†Meg	100K	22K
V10	12AV6	470K	1200o	22K	22K	NC	NC	† 500K		
V11	12AT7	† 95K	† 500K	22K	22K	22K	† 55K	†† 5 Meg	22K	
V12	12AB5	† 1000o	TP	200K	22K	22K	200K	0o	† 1000o	† 1000
V13	12AB5	† 1000o	NC	200K	22K	22K	200K	0o	† 1000o	† 1000
V14	EZ81	110o	NC	20K(min)	3o	0o	NC	100o	NC	NC

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED
* MEASURED IN "AM" POSITION
+ MEASURED IN "FM-AFC" POSITION
† MEASURED FROM PIN 3 OF V14
†† MEASURED FROM OUTPUT OF M1
NC NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter, AC voltages measured at 1000 ohms per volt
2. Socket connections are shown as bottom views
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings
6. Volume control at maximum, no signal applied for voltage measurements

ALL PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

365-8

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting. Treble control to extreme clockwise position.
To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1	.01MFD	High side to AM RF stator lug on tuning gang. Low side to chassis.	455KC (400∿Mod.)	AM (Sharp)	1600KC	AC VTVM. Across speaker terminals	A1, A2, A3, A4	Adjust for maximum deflection.
2	"	High side to AM antenna terminal. Low side to chassis	1400KC	"	1400KC	"	A5, A6	"
3	"	"	600KC	"	600KC	"	A7, A8	Adjust for maximum deflection. Repeat steps 2 & 3.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4	.01MFD	High side to FM RF stator lug on tuning gang. Low side to chassis.	10.7MC (unmod.)	FM (AFC off)	Point of non-interference	DC probe to point (A). Common to chassis.	A9, A10 A11, A12 A13, A14	Adjust for maximum deflection.
5	"	"	"	"	"	DC probe to point (B). Common to chassis.	A15, A16	Detune A16. Adjust A15 for maximum deflection and A16 for zero reading will equal positive and negative deflection on either side of correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4	.01MFD	High side to FM RF stator lug on tuning gang. Low side to chassis	10.7MC (450KC swp)	FM (AFC-off)	Point of non-interference	Vert amp. thru 1Meg to point (A). Low side to chassis.	A9, A10 A11, A12, A13, A14	Adjust for curve of maximum amplitude and symmetry similar to Fig. 1.
5	"	"	"	"	"	Vert. Amp. thru 1Meg to point (B). Low side to chassis.	A15, A16	Adjust A16 so that 10.7MC occurs at center of crossover lines similar to Fig. 2. Retouch A15 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6	270Ω Carbon Resistor	High side to FM antenna terminal thru 270Ω. Low side to chassis.	106MC	FM (AFC off)	106MC	DC probe to point (A). Common to chassis.	A17, A18, A19	Adjust for maximum deflection.
7	"	"	90MC	"	90MC	"	L5, L4, L3	Adjust for maximum deflection by compressing or expanding coil turns. Repeat steps 6 & 7.

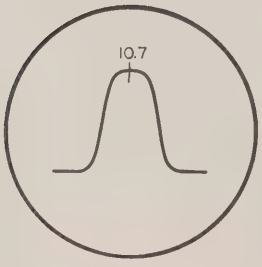


FIG. 1

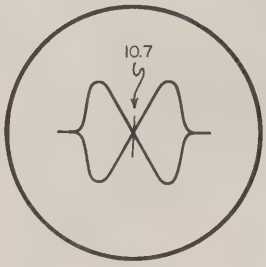
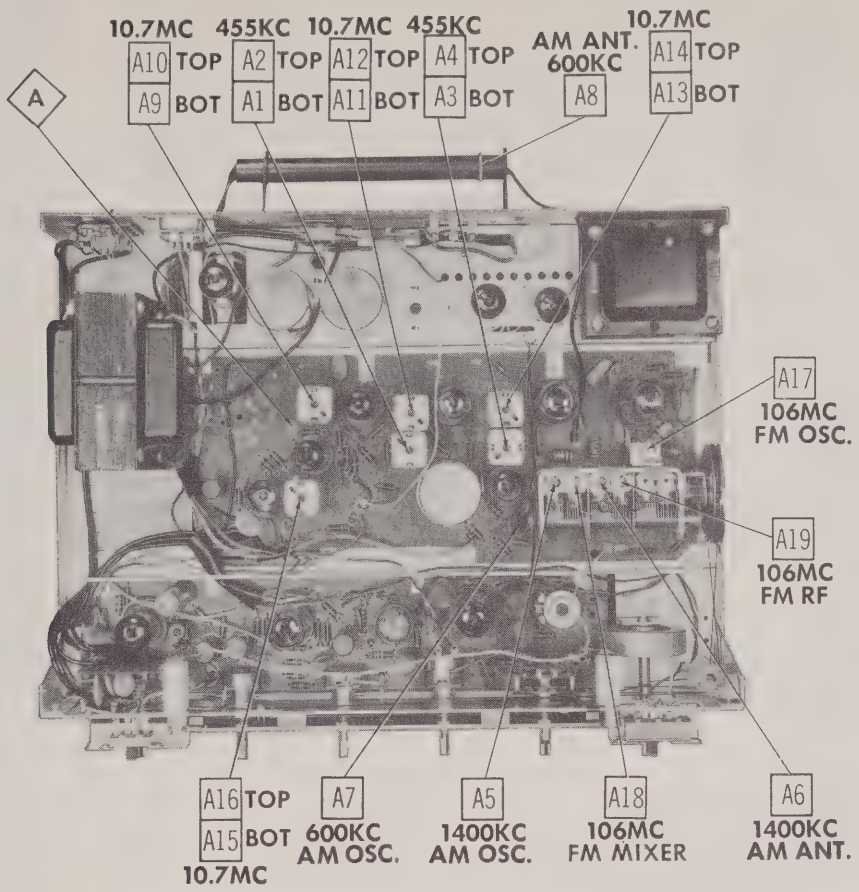
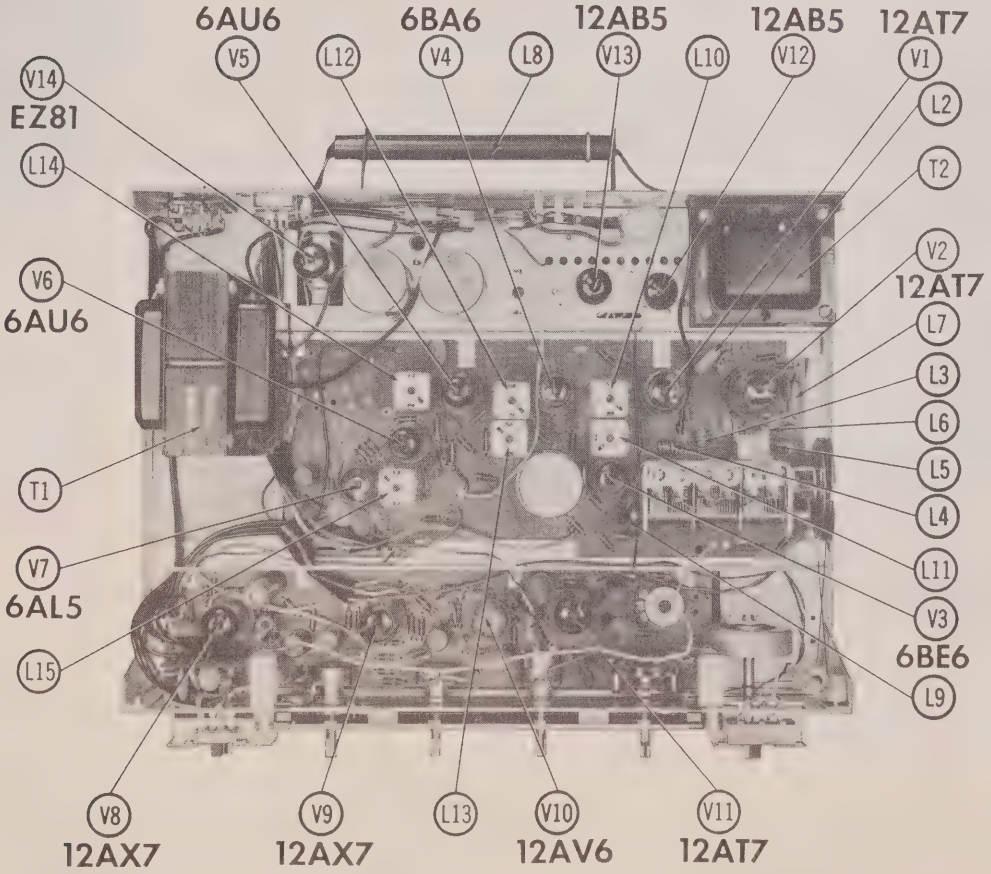


FIG. 2



CHASSIS TOP VIEW - ALIGNMENT IDENTIFICATION



CHASSIS TOP VIEW - TUBE AND TRANS. IDENTIFICATION

PARTS LIST AND DESCRIPTIONS
TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	FM RF Amp. -Mixer	12AT7	
V2	FM Osc. -AFC	12AT7	
V3	AM Converter	6BE6	
V4	1st. IF Amplifier	6BA6	
V5	2nd. FM IF Amp. - AM Det. -AVC	6AU6	
V6	Limiter	6AU6	
V7	Discriminator	6AL5	
V8	Tape-Phono Preamp.	12AX7	
V9	Cath. Follower-AF Amp.	12AX7	
V10	AF Amplifier	12AV6	
V11	Driver	12AT7	
V12	Output	12AB5	
V13	Output	12AB5	
V14	Rectifier	EZ81	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA HARMAN-KARDON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	40	475		AFH1-56-10	B0520	FP175 & TC82	TMD-61	S-300	TVL-1820
C2A	▲20	475		AFH2-69	B0500	FP173 TC83	TMD-61	Q-070	TVL-2935
B	▲20	475							
C3A	■40	150			D0320				R2411 *
B	▲60	150							
C	60	150							
C4	16	150		PRS150V16	BBR16-150	TC44	TD-16-150	FM-1516	TVA-1409
C5	8	150		PRS150V8	BBR8-150	TC41	TD-8-150	FM-1508	TVA-1405
C6	10	150		PRS150V10	BBR10-150	TC42	TD-10-150	FM-1510	TVA-1406

* Non catalog item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA Harmon-Kardon PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C7	470			SI 470	D6-471	LT6T47	GP-470	UC-5347	5GA-T47	
C8	47			N750-SI 47	TCN-47	C10Q47U	TC7-47	NT-5447	5TCU-Q47	N750
C9	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C10	.68				TCZ-R68		TC0-.68			
C11	470			BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C12	470			BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C13	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C14	470			BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C15	47			BPD-000047	DD-470	L10Q47	ED-47	UC-5447	5GA-Q47	
C16	2.2			NP0-SI 2.2	TCZ-2R2	C10V22C	TC0-2.2		5TCCB-V22	NP0
C17	100			N750-SI 100	TCN-100	C10T1U	TC7-100	NT-531	5TCU-T1	N750
C18	1-10		JV20688							
C19	470			BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C20	10			BPD-00001	DD-100	L10Q1	ED-10	UC-541	5GA-Q1	
C21	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C22	100			N750-SI 100	TCN-100	L10T1U	TC7-100	NT-531	5TCU-T1	N750
C23	47			N750-SI 47	TCN-47	L10Q47U	TC7-47	NT-5447	5TCU-Q47	N750
C24	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C25	10000			BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	

PARTS LIST AND DESCRIPTIONS (Continued)
RESISTORS (cont)

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA Harman-Kardon PART No.	IRC PART No.	NOTES
R33	56K			BTS-56K	
R34	560K			BTS-560K	
R35	680K			BTS-680K	
R36	2200Ω			BTS-2200	
R37	220K			BTS-220K	
R38	270K			BTS-270K	
R39	1500Ω			BTS-1500	
R40	68K			BTS-68K	
R41	2.2Meg			BTS-2.2Meg	
R42	1Meg			BTS-1Meg	
R43	470K			BTS-470K	
R44	2.2Meg			BTS-2.2Meg	
R45	1Meg			BTS-1Meg	
R46	1500Ω			BTS-1500	
R47	100K			BTS-100K	
R48	100K			BTS-100K	
R49	470K			BTS-470K	
R50	1000Ω			BTS-1000	
R51	100K			BTS-100K	
R52	270K			BTS-270K	
R53	1500Ω			BTS-1500	
R54	56K			BTS-56K	
R55	56K			BTS-56K	
R56	180K			BTS-180K	
R57	390K			BTS-390K	
R58	56K			BTS-56K	
R59	470K			BTS-470K	
R60	470K			BTS-470K	
R61	1200Ω			BTS-1200	
R62	68K			BTS-68K	
R63	1Meg			BTS-1Meg	
R64	47K			BTS-47K	
R65	47K			BTS-47K	
R66	27K			BTS-27K	
R67	1000Ω			BTS-1000	
R68	150K			BTS-150K	
R69	47K			BTS-47K	
R70	47K			BTS-47K	
R71	150K			BTS-150K	
R72	1000Ω			BTS-1000	
R73	330Ω			BTS-330	
R74	330Ω			BTS-330	
R75	68Ω			BTS-68	
R76	2200Ω			BTS-2200	
R77	47K			BTS-47K	
R78	27K	2		BTB-27K	
R79	4700Ω			BTS-4700	
R80	1000Ω			BTS-1000	Note 1
R81	1000Ω			BTS-1000	Note 1

Note 1. Not used in some versions

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA Harman-Kardon PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC ② .8A	720VCT ② .074A	115V ② .022A Tap ② 6.3V ② 3.3A	12V ② 1A	FT1031858					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA Harman-Kardon PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	7500Ω CT	16Ω Tapped ② 8Ω, 4Ω	FT1021777 ①						① Alternate Part #FT1021707

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA Harman-Kardon PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C26	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C27	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C28	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C29	.05	200		BPD-05	DF-503	BC2S47J		ACE215	2SE-S47	
C30	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C31	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C32	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C33	47			N750-SI 47	TCN-47	C10Q47U	TC7-47	NT-5447	5TCU-Q47	N750
C34	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C35	100			N750-SI 100	TCN-100	C10T1U	TC7-100	NT-531	5TCU-T1	N750
C36	470			BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C37	470			BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C38	.05	200		BPD-05	DF-503	BC2S47J		ACE215	2SE-S47	Note 1
C39	270			BPD-00027	DD-271	L10T27	ED-270	UC-5327	5GA-T27	
C40	1000			BPD-001	DD-102	BYA6Dl	ED-1000	DC521	5HK-Dl	
C41	1000			BPD-001	DD-102	BYA6Dl	ED-1000	DC521	5HK-Dl	
C42	1000			BPD-001	DD-102	BYA6Dl	ED-1000	DC521	5HK-Dl	
C43	4700			BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C44	4700			BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C45	.05	200		BPD-05	DF-503	CUB255		GEM-215	2TM-S47	
C46	.05	400		BPD-05	DF-503	BC6S47J		ACE615	4SE-S47	
C47	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C48	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C49	10000			BPD-01	DD-103	BYA6Sl	ED-01	DC511	5HK-Sl	
C50	.1	200			DF-104	BC2PlJ		ACE201	2SE-P1	
C51	100			BPD-0001	DD-101	L10T1	ED-100	UC-531	5GA-T1	
C52	3900			BPD-004	DD-402	BYA10D4	ED-004	UC-524	5HK-D4	
C53	3900			BPD-004	DD-402	BYA10D4	ED-004	UC-524	5HK-D4	
C54	.05	400		BPD-05	DF-503	BC6S47J		ACE615	4SE-S47	
C55	3900			BPD-004	DD-402	LT6D4	ED-004	UC-524	5HK-D4	
C56	.1	200			DF-104	BC2PlJ		ACE201	2SE-P1	
C57	270			N750-SI 270	TCN-270	L10T27U	TC7-270			N750
C58	47			N750-SI 47	TCN-47	L10Q47U	TC7-47	NT-5447	5TCU-Q47	N750
C59	.22	400				BC4P22J		ACE6022	4SE-P22	
C60	.22	400				BC4P22J		ACE6022	4SE-P22	
C61	.22	400				BC4P22J		ACE6022	4SE-P22	
C62	.01	600		BPD-01	DD-103	CUB6Sl	GP-10000	GEM-611	6TM-Sl	

Note 1. Not used in some versions.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Harman-Kardon PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500K	½	RV1031879					Loudness, Tap@ 250K
B	Switch							
R2	500K	½	RV1031878					Treble, Tap@ 250K
R3	1Meg	½	RV1031877					Bass
R4	15K	½	RV1021725					Signal Balance
R5A	15K	½	RV1021708	AB-22	A47-15K-S	B11-118	TA153L	Bias Balance
B	Shaft			AK-1	FKS-1/4	TM1-Kit	Not req.	
R6A	500Ω	½	RV1021709	AB-4	A47-500-S	B11-103	TA52L	Hum Balance
B	Shaft			AK-1	FKS-1/4	TM1-Kit	Not req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA Harman-Kardon PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R7	68Ω			BTS-68	
R8	3.3Meg			BTS-3.3Meg	
R9	15K			BTS-15K	
R10	22K			BTS-22K	
R11	1000Ω			BTS-1000	
R12	100Ω			BTS-100	
R13	470K			BTS-470K	
R14	47K			BTS-47K	
R15	1Meg			BTS-1Meg	
R16	1000Ω 5%			BTS-1000 5%	
R17	22K			BTS-22K	
R18	1Meg			BTS-1Meg	
R19	2.2Meg			BTS-2.2Meg	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA Harman-Kardon PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R20	220K			BTS-220K	
R21	3300Ω			BTS-3300	
R22	1000Ω			BTS-1000	
R23	1000Ω			BTS-1000	
R24	1000Ω			BTS-1000	
R25	100K			BTS-100K	
R26	10K			BTS-10K	
R27	15K			BTS-15K	
R28	33K			BTS-33K	
R29	33K			BTS-33K	
R30	100K			BTS-100K	
R31	100K			BTS-100K	
R32	47K			BTS-47K	

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA Harman-Kardon PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	FM Antenna Coil				4584	.24 Microhenry, IRC Part #CLA
L2	RF Choke					3.3 Microhenries, IRC Part #CLA
L3	FM RF Coil	GL78543				
L4	FM Mixer Coil	GL78543				
L5	FM Osc. Coil	GL781544				
L6	Cathode Choke		19-1000	BC-561	4602	1 Microhenry, IRC Part #CLA
L7	RF Choke					3.3 Microhenries, IRC Part #CLA
L8	Loop Stick *	GL1031936				* Ant. Tuning Ring Part #P481329
L9	AM Osc. Coil	GL121988				
L10	1st. FM IF	GT781491	16-3490			
L11	1st. AM IF	GT781493	16-6780	BC-356	13-PC1	
L12	2nd. FM IF	GT781570	16-3490			
L13	2nd. AM IF	GT781493	16-6780	BC-357	13-PC2	
L14	3rd. FM IF	GT781570	16-3490			
L15	Discriminator	GT781492	17-3491			

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Harman-Kardon PART No.	REPLACEMENT DATA	
K1	Det. Filter	150MMF, 150MMF, 47K		Aerovox	PA-98
				Centralab	PC-51
				Cornell-Dubilier	111TM2
				Erie	1403-02
				Sprague	D-2

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA Harman-Kardon PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.	NOTES
M1	.022A	Z781490	1002	RS0652	6S65	65	
M2	.002A	Z1021726	1159	CR20		10	

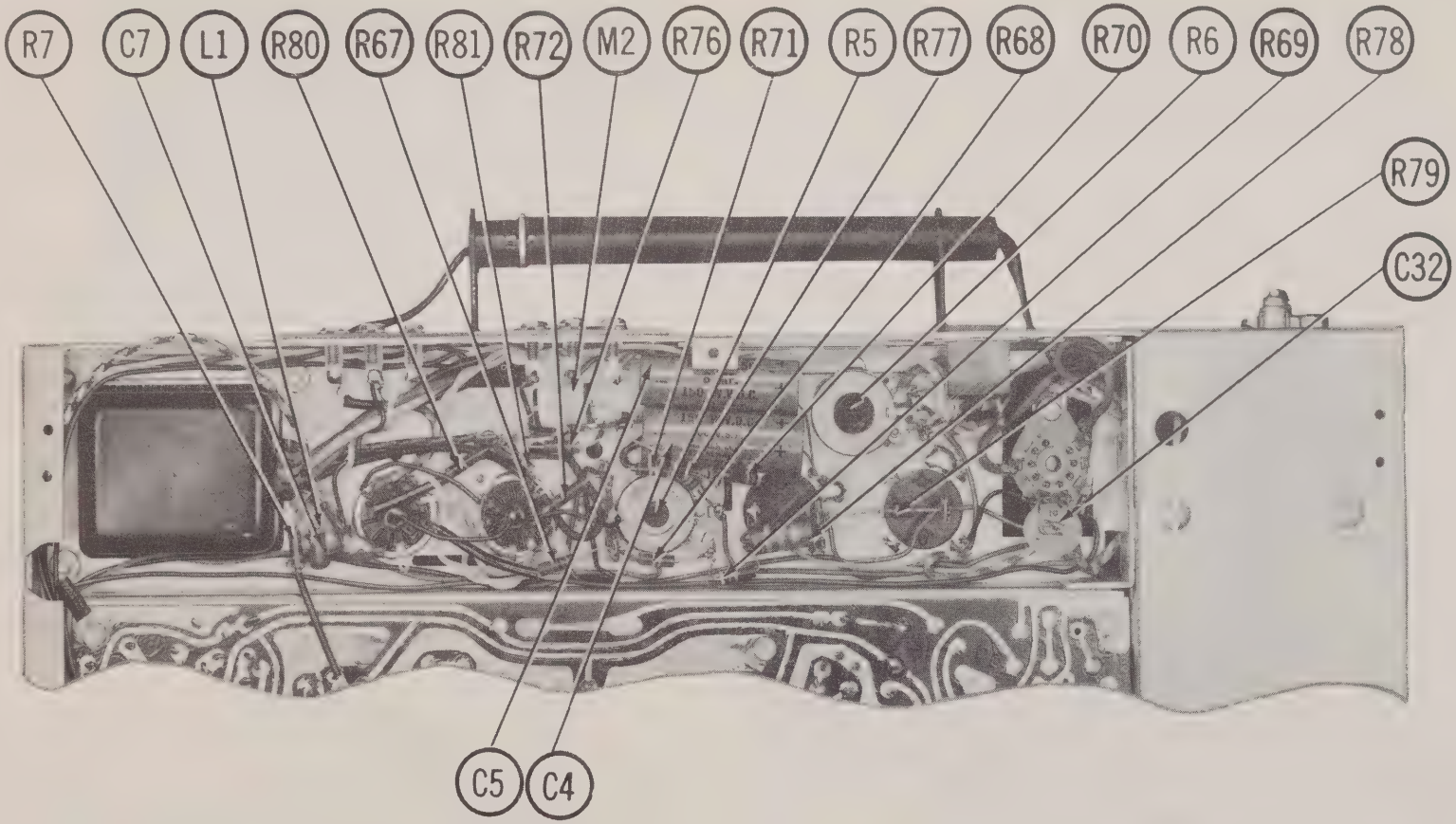
FUSE

ITEM No.	TYPE	RATING	REPLACEMENT DATA HARMAN-KARDON PART No. FUSE	HARMAN-KARDON PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M3	3AG	1 1/4 A 125V Slo Blo	(Note 1)		3131.25 (3AG-1 1/4 A Slo Blo)	357001	MDL 1 1/4	4405

Note 1. Not used in some versions

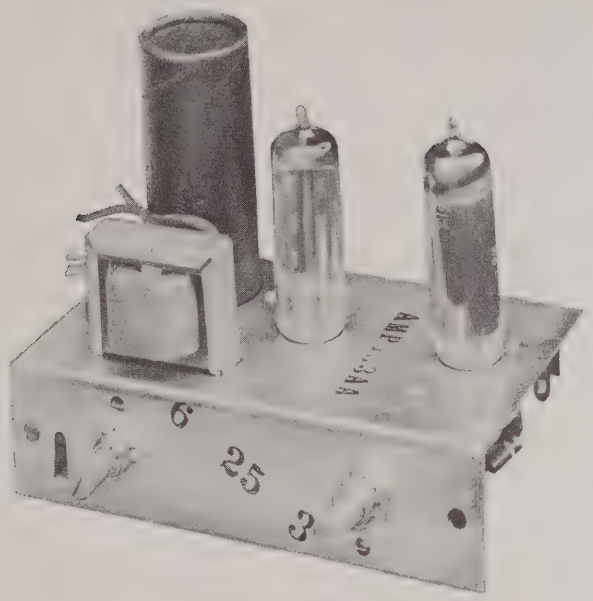
MISCELLANEOUS

ITEM No.	PART NAME	Harman-Kardon PART No.	NOTES
M4	Dial Light		#47
M5	Dial Light		#47
M6	Tuning Cap	JV811556	5 Gang (Alternate Part #JV1031886)
M7	Switch	ER1031742	Function, Rotary Wafer Type
M8	Switch	ER1021632	Contour, Rotary Wafer Type
M9	Switch		Speaker Selector, Slide Type
M10	Switch		Rumble Filter, Slide Type
	Printed Panel	PB1145ID	RF-IF Chassis
	Printed Panel	P1021630E	Amplifier Chassis
	Knob	P22783	
	Knob	P20778	
	Dial Glass	P1031863	
	Pointer	P1031864	

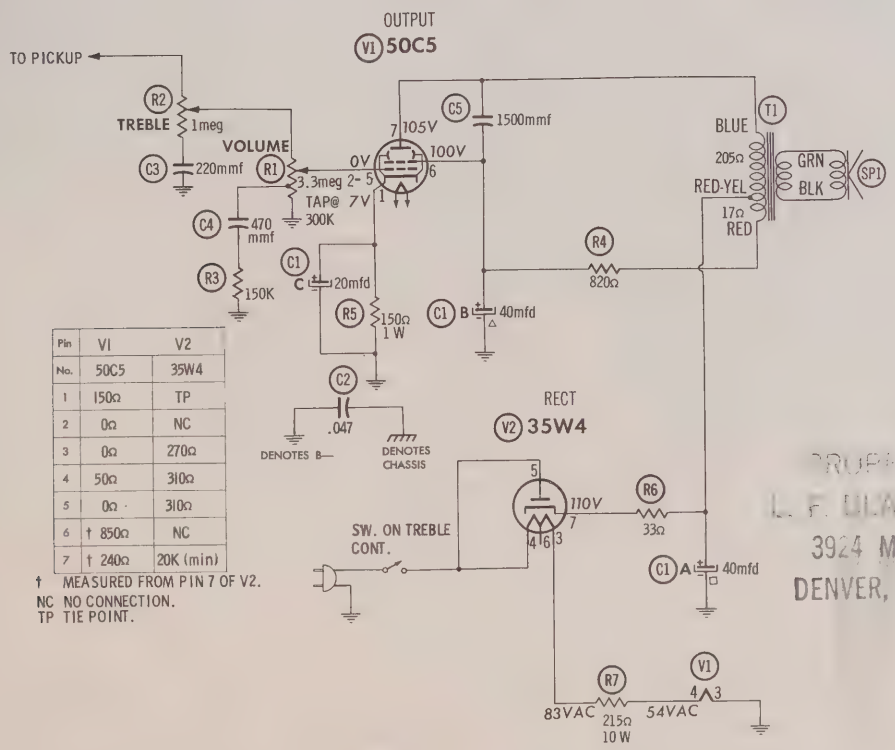


AMPLIFIER CHASSIS - BOTTOM VIEW

MAGNAVOX
CH. AMP-153AA



TRADE NAME	Magnavox Ch. Amp-153AA
MANUFACTURER	Magnavox Co., 2131 Bueter Rd., Fort Wayne, Indiana
TYPE SET	AC Operated Phono Amplifier
TUBES (Two)	Types 50C5 Output, 35W4 Rectifier
POWER SUPPLY	110-120 Volts AC - 60 Cycles RATING .25 Amp. @ 117 Volts AC



Pin No.	V1 50C5	V2 35W4
1	150Ω	TP
2	0Ω	NC
3	0Ω	270Ω
4	50Ω	310Ω
5	0Ω	310Ω
6	† 850Ω	NC
7	† 240Ω	20K (min)

† MEASURED FROM PIN 7 OF V2.
NC NO CONNECTION.
TP TIE POINT.

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

365-9

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Output	50C5	

ITEM No.	USE	TYPE	NOTES
V2	Rectifier	35W4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	MAGNAVOX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	■40	150	270023-24	AFH3-09	C0080	FP311.5	TMT-8	T-040	TVL-3438
B	▲40	150							
C	20	150							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP.	VOLT	MAGNAVOX PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.047	600	250201-11	BPD-05	DF-503	CUB6S47		GEM-6147	6TM-S47	
C3	220		250218-5	BPD-00022	D6-221	G051	ED-220	UC-5322	5GA-T22	
C4	470		250218-6	BPD-00047	D6-471	K060	ED-470	UC-5347	5GA-T47	
C5	1500		250218-18	BPD-0015	D6-152	K071	ED-1500	DC-5215	5HK-D15	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESIST-ANCE	WATTS	MAGNAVOX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	3.3Meg	½	220131-6	ABT-8517	A47F-3Meg		UT-461	Volume, Tap @ 300K
B	Shaft			AK-3	FS-3			
R2A	1Meg	½	220123-23	B-70-S	A47-1Meg-Z	Q13-137	U53	Treble
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MAGNAVOX PART No.	IRC PART No.	
R3	150K		230104-88	BTS-150K	
R4	820Ω		230104-82	BTS-820	
R5	150Ω	1	230105-52	BTA-150	

ITEM No.	RATING		REPLACEMENT DATA		NOTES
	OHMS	WATT	MAGNAVOX PART No.	IRC PART No.	
R6	33Ω		230104-44	BTS-33	
R7	215Ω	10	240071-17	1 3/4A-225	

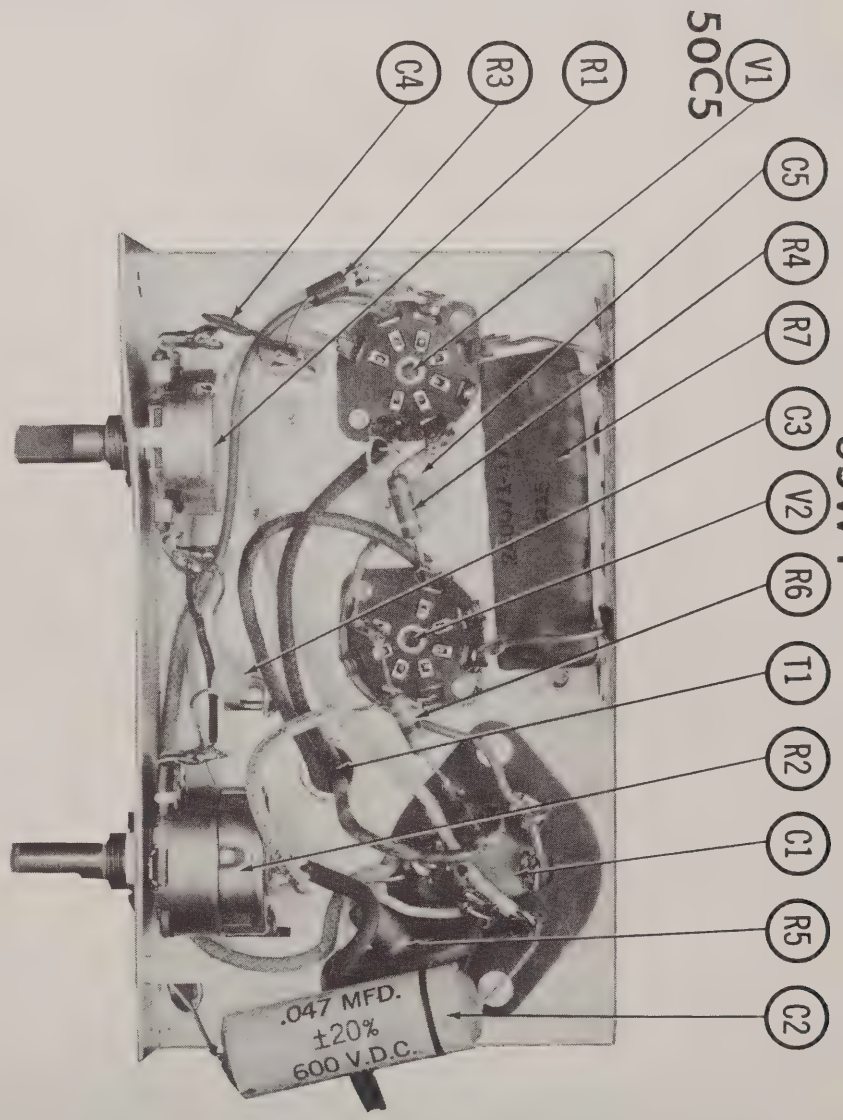
TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MAGNAVOX PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2500Ω	3-4Ω	320271-1	Z1103 ①	A-3031①	A-3336 ①	24S50A ①	S-16X ①	① Drill Mtg. Holes

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MAGNAVOX PART No.	QUAM PART No.	
SP1	8"	PM	3-4Ω	583688-1	8A21	

CHASSIS—BOTTOM VIEW



PHOTOFACT* Folder

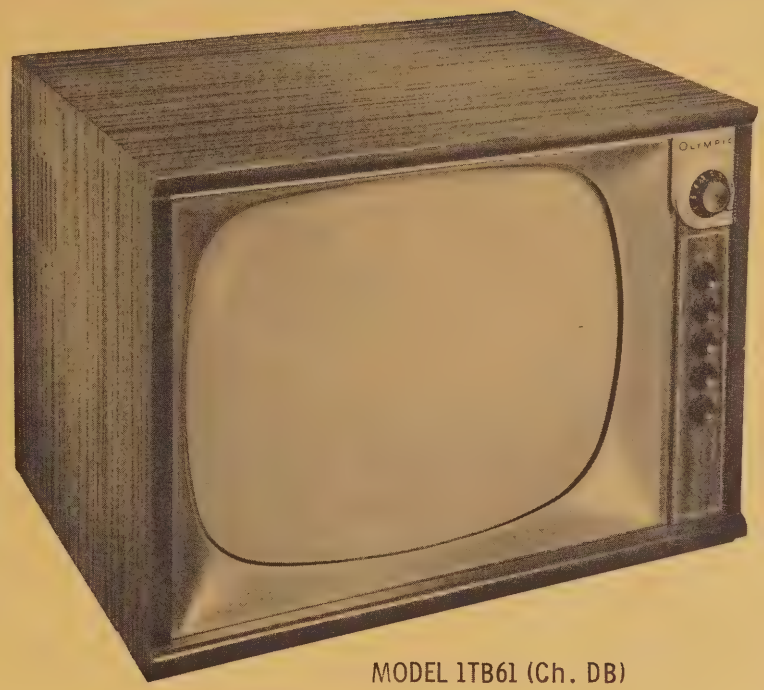
*TRADE MARK

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . unless it has been purchased as part of a complete volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



MODEL 1TB61 (Ch. DB)

OLYMPIC MODELS 1CA70, U, 1CB71, U, 1CB72, U, 1CB77, U, 1KA80, U, 1KB87, U, 1KB88, U, 1TA60, U, 1TB61, U, 4CE75, U, 4CF76, U, 4KF84, U (Ch. DA, DAU, DB, DBU, DE, DEU, DF, DFU)

TRADE NAME	Olympic	MODELS	CHASSIS
		1CA70, 1KA80, 1TA60	DA
		1CA70U, 1KA80U, 1TA60U	DAU
		1CB71, 1CB72, 1CB77, 1KB87, 1KB88, 1TB61	DB
		1CB71U, 1CB72U, 1CB77U, 1KB87U, 1KB88U, 1TB61U	DBU
		4CE75	DE
		4CE75U	DEU
		4CF75, 4CF76, 4KF84	DF
		4CF75U, 4CF76U, 4KF84U	DFU

MANUFACTURER	Olympic Radio & Television Inc., 34-01 38th Ave., Long Island City 1, N.Y.
TYPE SET	Television Receiver
TUBES	Fifteen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING 165 Watts, 1.5 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

INDEX

Alignment Instructions 6
Disassembly Instructions 1
Horizontal Sweep Circuit Adjustments 17
Parts List and Descriptions 12, 13, 14
Photographs
Cabinet-Rear View 17
Capacitor & Alignment Identification 4, 9
Chassis-Top View 7
RF Tuner 15
Photographs (Con't)
Resistor & Inductor Identification 5, 8
Resistance Measurements 10
Servicing in the Field 1
Schematic (Alternate Tuners) 11, 16
Schematic (TV) 2
Tube Failure Check Chart 3
Tube Placement Chart (Bottom View) 10
Tube Placement Chart (Top View) 3

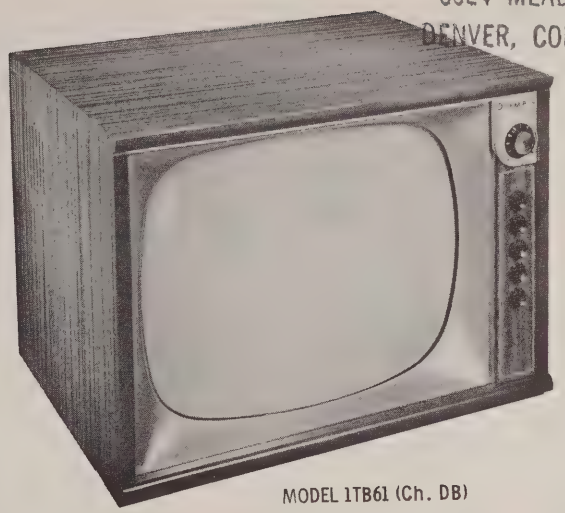
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PHOTOFACT* Folder
*TRADE MARK

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

OLYMPIC MODELS 1CA70, U, 1CB71, U, 1CB72, U, 1CB77, U, 1KA80, U, 1KB87, U, 1KB88, U, 1TA60, U, 1TB61, U, 4CE75, U, 4CF76, U, 4KF84, U (Ch. DA, DAU, DB, DBU, DE, DEU, DF, DFU)



MODEL 1TB61 (Ch. DB)

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 7 push-on type control knobs.
2. Remove 2 wood screws and the rear cover.
3. Remove picture tube socket, yoke plug, speaker plug and HV lead.
4. Remove 1 chassis bolt at the upper left side of the cabinet.
5. Remove 2 chassis bolts from the bottom.
6. Remove chassis.
7. Remove 2 speaker nuts and the speaker.

MODELS	CHASSIS
1CA70, 1KA80, 1TA60	DA
1CA70U, 1KA80U, 1TA60U	DAU
1CB71, 1CB72, 1CB77, 1KB87, 1KB88, 1TB61	DB
1CB71U, 1CB72U, 1CB77U, 1KB87U, 1KB88U, 1TB61U	DBU
4CE75	DE
4CE75U	DEU
4CF75, 4CF76, 4KF84	DF
4CF75U, 4CF76U, 4KF84U	DFU

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. One slug for HIGH band adjustment is located 11 o'clock, and should be adjusted first. The LOW band adjustment is located at 4 o'clock. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

Remove the channel selector and fine tuning knobs. Remove 1 screw holding escutcheon. Remove 3 screw holding metal trim across the top of the cabinet. Remove the safety glass.

SPECIAL ADJUSTMENTS - FOCUS

A. 21" Models
Adjust the ion trap for the best focus consistent with maximum brightness.

B. 24" Models
The focus may be varied by means of a focusing screw in the magnet assembly. Use a non-ferrous screwdriver in making this adjustment.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Adjustment of the horizontal frequency slug may be made from the rear panel of the receiver. Set the horizontal hold control to the center of its range and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate audio detector buzz, adjust the buzz control for MINIMUM buzz and maximum sound. (For location see tube placement chart).

FUSES

One fuse is used for horizontal sweep circuit protection. (For location see tube placement chart).

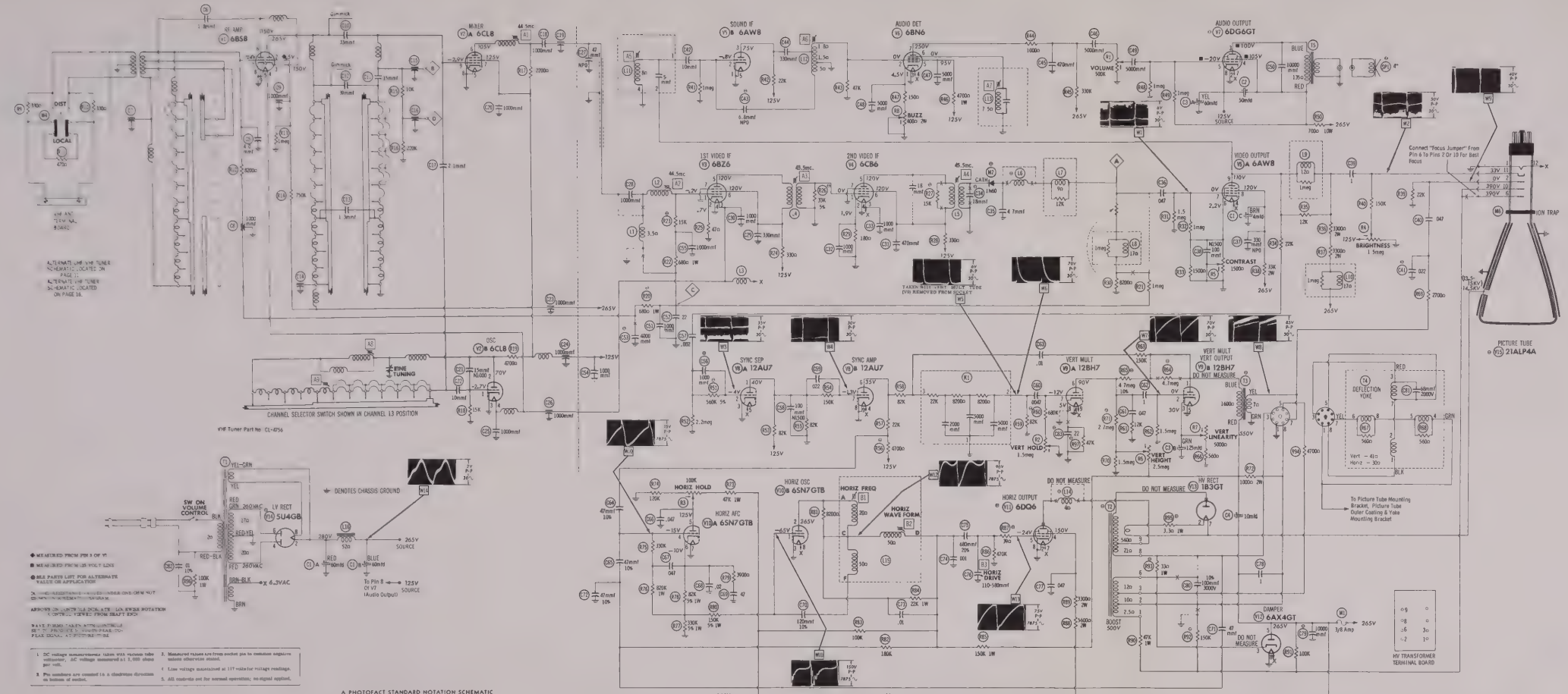
CENTERING

A. 21" Models
Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

B. 24" Models
Centering is accomplished mechanically by means of a centering arm. Adjust the arm from side to side, and up and down until the picture is properly centered.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

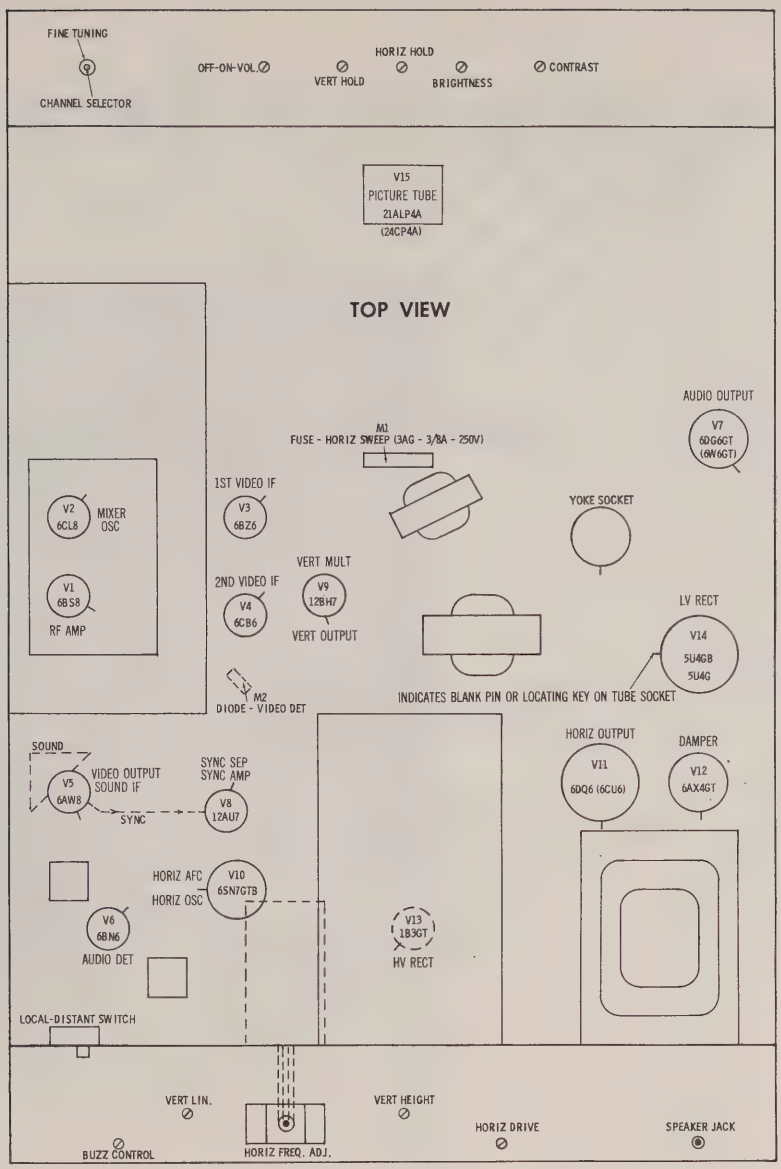
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


RF AMP V1 6BS8
MIXER V2A 6CL8
SOUND IF V3B 6AW8
AUDIO DET V6 6BN6
AUDIO OUTPUT V7 6DG6GT
1ST VIDEO IF V7 6BZ6
2ND VIDEO IF V4 6CB6
VIDEO OUTPUT V8A 6AW8
OSC V5B 6CL8
SYNC SEP V8B 12AU7
SYNC AMP V8B 12AU7
VERT MULT V9A 12BH7
VERT MULT VERT OUTPUT V9B 12BH7 DO NOT MEASURE
HORIZ OSC V10B 6SN7GTB
HORIZ AFC V10A 6SN7GTB
HORIZ OUTPUT V11 6DQ6
HV RECT V13 1B3GT
DAMPER V13 6AX4GT
LV RECT V11 5U4GB
PICTURE TUBE V15 21ALP4A
ION TRAP
DEFLECTION YOKE
VOLUME 500K
BRIGHTNESS 1.5meg
CONTRAST 1500Ω
VERT HOLD 1.5meg
VERT HEIGHT 2.5meg
VERT LINEARITY 5000Ω
HORIZ HOLD 100K
HORIZ FREQ
HORIZ WAVE FORM
HORIZ DRIVE 110-140mH
BUZZ 1.5-4000 2W
FINE TUNING
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
VHF Tuner Part No. CL-4756
SW ON VOLUME CONTROL
DENOTES CHASSIS GROUND
To Pin 8 125V SOURCE (Audio Output)
Connect "Focus Jumper" From Pin 6 To Pins 2 Or 10 For Best Focus
To Picture Tube Mounting Bracket, Picture Tube Outer Coating & Yoke Mounting Bracket
HV TRANSFORMER TERMINAL BOARD
DO NOT MEASURE
TAKEN WITH VERT OUTPUT TUBE (V9) REMOVED FROM SOCKET
ALTERNATE UHF TUNER SCHEMATIC LOCATED ON PAGE 11
ALTERNATE VHF TUNER SCHEMATIC LOCATED ON PAGE 16.
◆ MEASURED FROM PIN 3 OF V1
■ MEASURED FROM 125 VOLT LINE
● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
1. DC voltage measurements taken with vacuum tube voltmeter. AC voltage measured at 1,000 ohms per volt.
2. Pin numbers are counted in a clockwise direction as bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. All controls set for normal operation; no signal applied.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

OLYMPIC MODELS 1CA70, U, 1CB71, U, 1CB72, U, 1CB77, U, 1KA80, U, 1KB87, U, 1KB88, U, 1TA60, U, 1TB61, U, 4CE75, U, 4CF76, U, 4KF84, U (Ch. DA, DAU, DB, DBU, DE, DEU, DF, DFU)

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

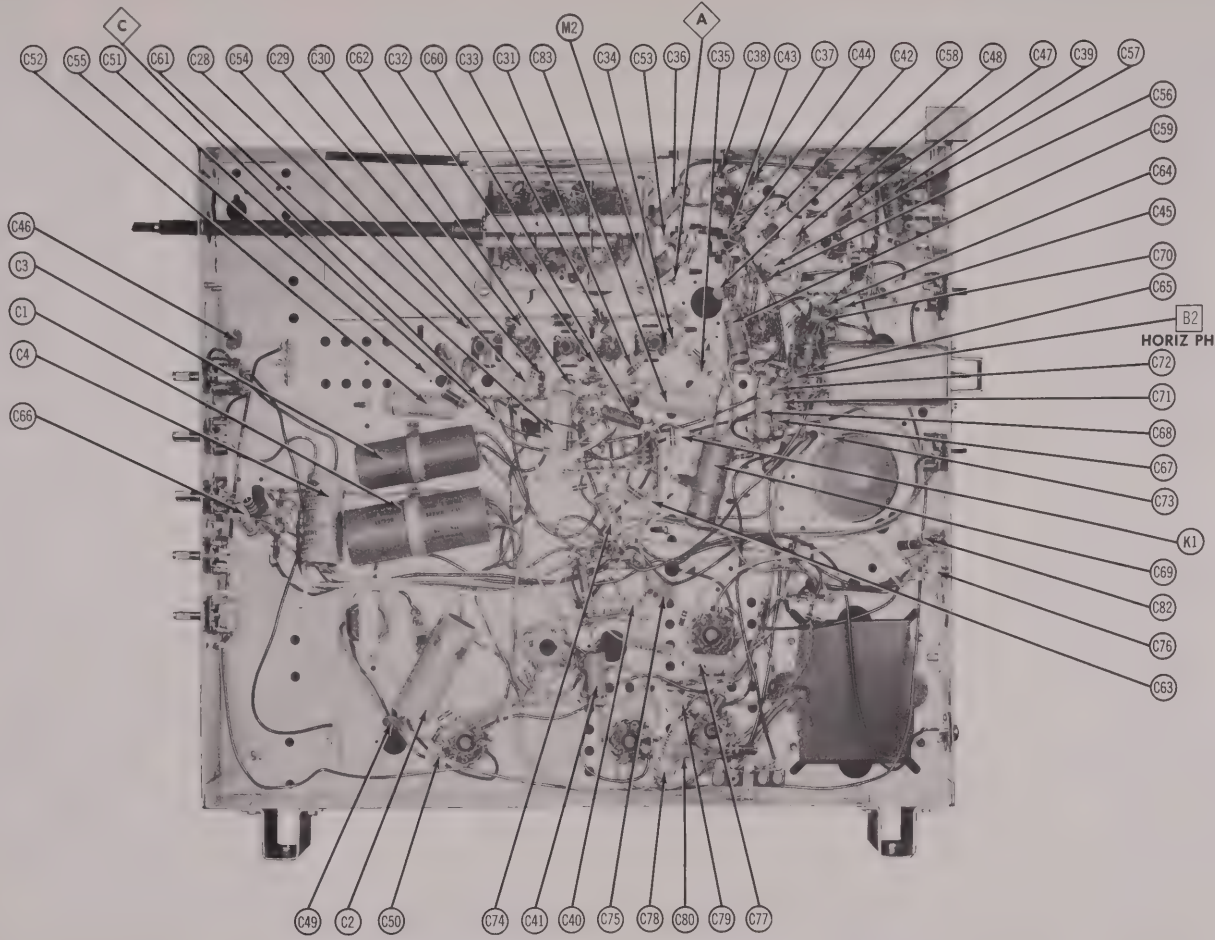
POWER SUPPLY FAILURE
No raster, no sound - V14

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V3, V4, Diode (M2), V5, V7
No pic, no sound, has snow - V1, V2
No pic, has sound, has raster - V5, V15
Has pic, no sound - V5, V6, V7

SYNC FAILURE
No vert. sync - V8, V7
No horiz. sync - V8, V10, V7
No vert. or horiz. sync - V8, V7

SWEEP FAILURE
No raster, has sound - Fuse (M1), V10, V11, V12, V13, V15
No vertical deflection - V9
Poor vert. linearity or foldover - V9
Poor horiz. linearity or foldover - V10, V11, V12
Narrow picture - V10, V11, V12, V14
Vert. off freq. - V9
Horiz. off freq. - V10

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

OLYMPIC MODELS 1CA70, U, 1CB71, U, 1CB72, U, 1CB77, U, 1KA80, U, 1KB87, U, 1KB88, U, 1TA60, U, 1TB61, U, 4CB75, U, 4CD76, U, 4B76A, U (CH, DA, DAU, DB, DBU, DE, DEU, DF, DFU)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage lead should be securely taped and kept away from the chassis.
Do not remove the horizontal output tube (V11) from its socket to disable the high voltage.
Allow a 20 minute warm-up period for the receiver and test equipment.

VIDEO IF ALIGNMENT

Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	10MMF	High side to point (B). Low side to chassis.	Not used	44.5MC (Unmod)	Any non-interfering channel	USE VTVM. DC probe thru 100K to point (A). Common to chassis.	A1, A2	Use only enough generator output to provide usable indication on VTVM.
2.	"	"	"	43.5MC	"	"	A3	"
3.	"	"	"	45.5MC	"	"	A4	"
4.	"	"	44.5MC (10MC Swp)	43.25MC 45.75MC	"	Vert. Amp. thru detector probe (Fig. 2) to pin 5 (plate) of 6BZ6 (V3). Low side to chassis.		Use only enough sweep generator output to provide usable pattern on scope. Connect separate markers as in Fig. 2. Connect the negative lead of a 3 volt bias supply to point (C). Positive to chassis. Check for response curve similar to Fig. 1. If necessary, retouch A1 and A2 for desired response.
5.	"	"	"	"	"	Vert. Amp. thru 100K to point (A). Low side to chassis.		Connect marker generator to ungrounded tube shield floating over mixer-oscillator tube. Check for response similar to Fig. 3. If necessary, retouch A1 thru A4 for desired response.

SOUND IF ALIGNMENT

Connect the DC probe of the VTVM to pin 2 (grid) of the 6BN6 (V6). Common to chassis.
Turn the set on and tune in a strong TV signal. Adjust A5 and A6 for maximum deflection on the VTVM. Disconnect the VTVM from the receiver. Set the buzz control (R8) at the center of its range and adjust A7 for maximum volume. Adjust R8 for maximum volume and MINIMUM buzz. Retouch A5 and A6 for maximum volume.

OSCILLATOR ALIGNMENT

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the center of its range.
Use only enough generator output to provide usable indication on VTVM.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	Across antenna terminals.	237.5MC	13	High side thru 100K to point (D). Low side to chassis.	A8	Adjust for zero beat on scope.
7.	"	"	103.5MC	6	"	A9	"

RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

UHF ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

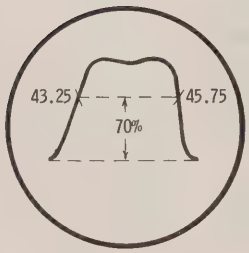


FIG. 1

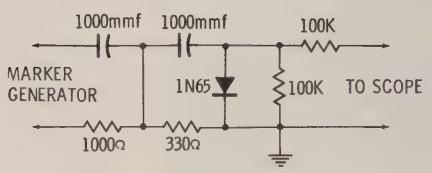


FIG. 2

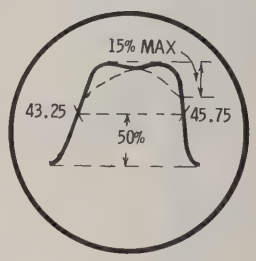
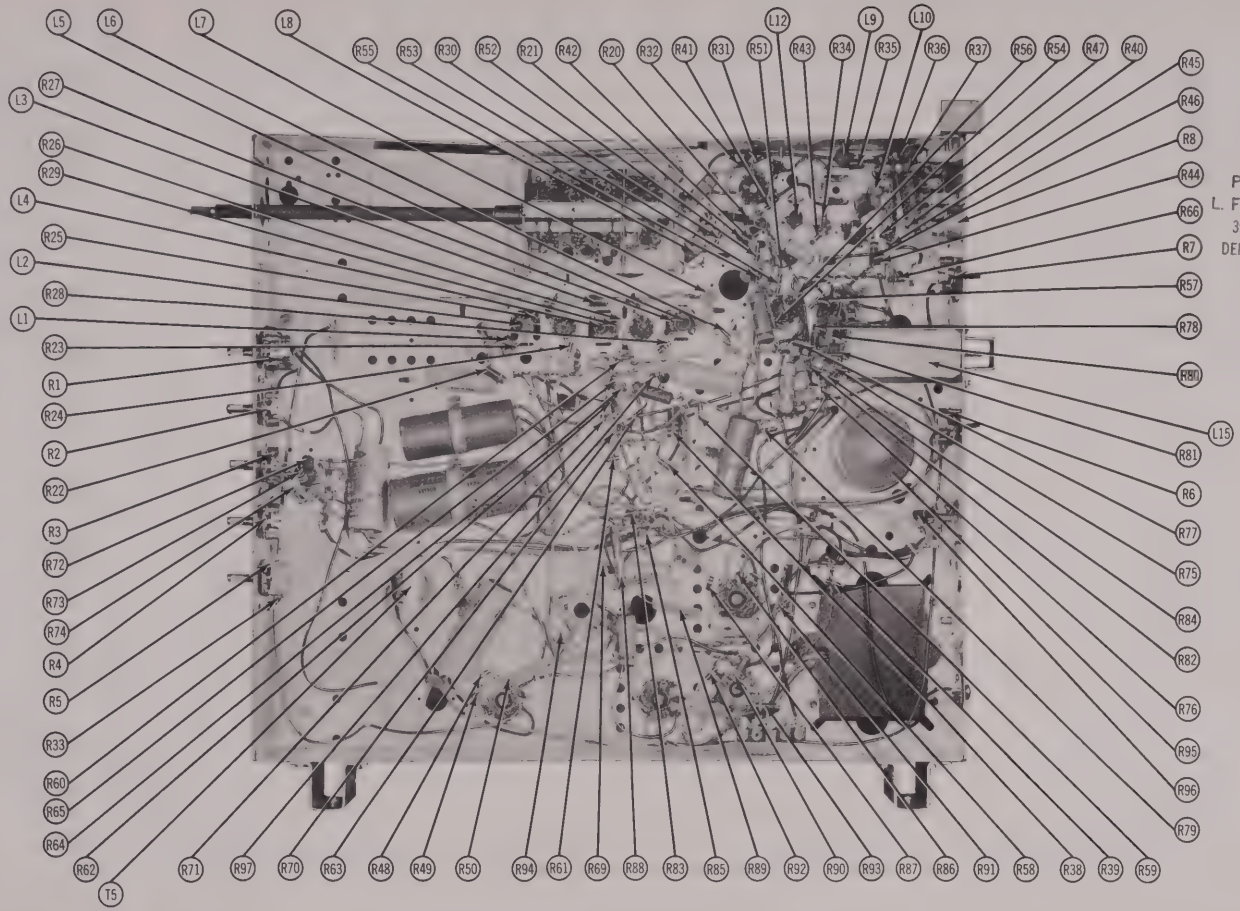


FIG. 3

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

CHASSIS TOP VIEW



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO

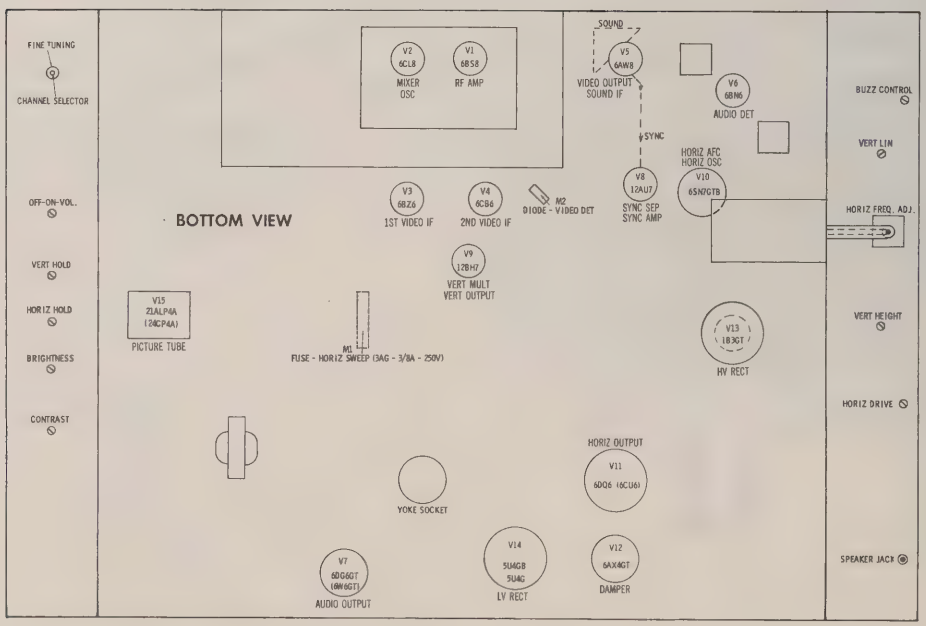
OLYMPIC MODELS 1CA70, U, 1C871, U, 1C872, U, 1C877, U, 1KA90, U, 1KS87, U, 1KS88, U, 1TA60, U, 1TB61, U, 4CF5, U, 4CF76, U, 4KF94, U (Ch. DA, DAU, DB, DBU, DE, DEU, DF, DFU)

CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

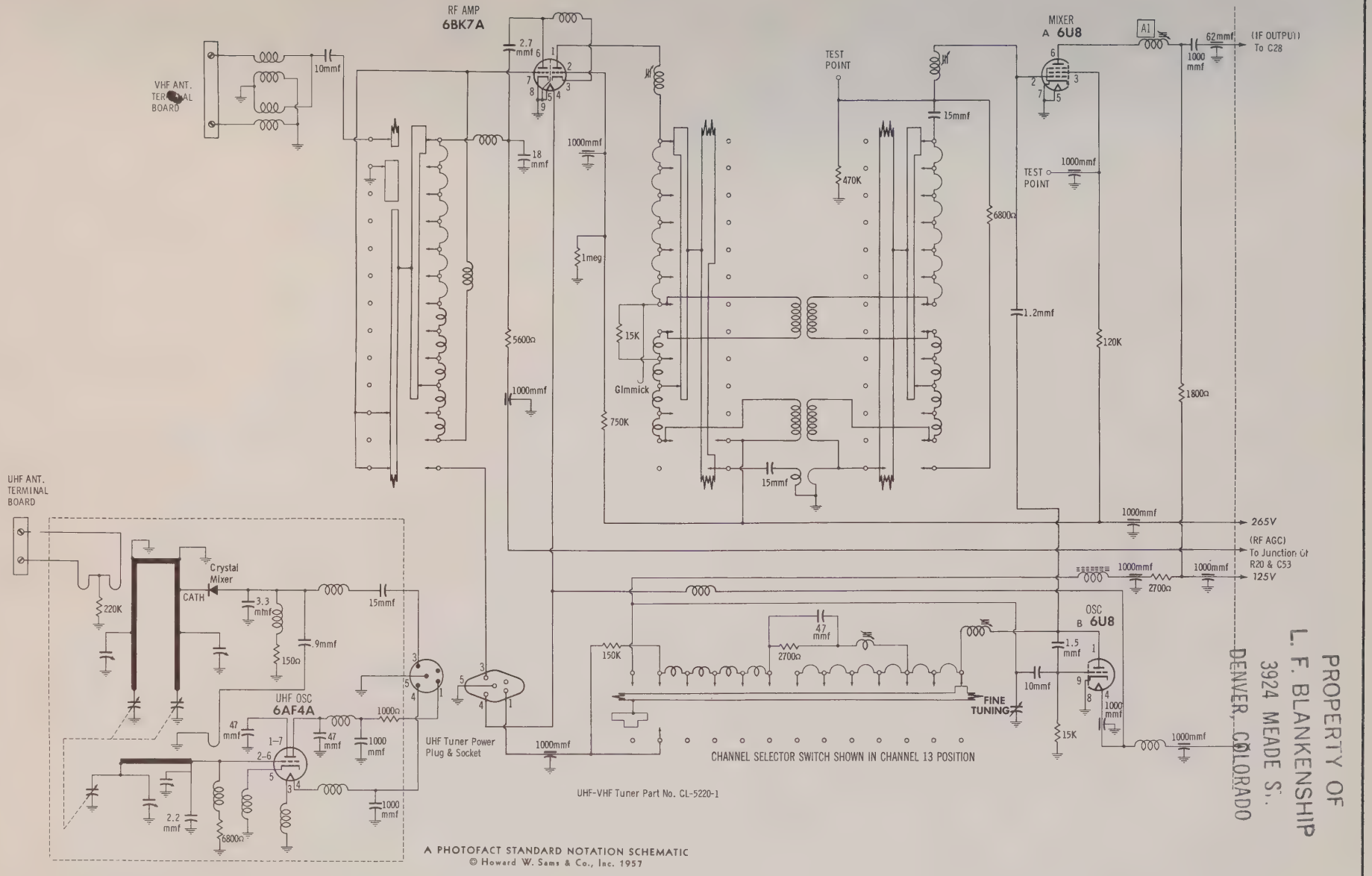
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BS8	†52Ω	†750K	INF	.1Ω	0Ω	INF	1Meg	0Ω	0Ω
V2	6CL8	15K	▪4700Ω	0Ω	.1Ω	0Ω	▪ 0Ω	▪ 2200Ω	0Ω	220K
V3	6BZ6	1Meg	47Ω	.1Ω	0Ω	▪ 330Ω	▪ 330Ω	0Ω		
V4	6CB6	.1Ω	180Ω	.1Ω	0Ω	▪ 330Ω	▪ 330Ω	0Ω		
V5	6AW8	0Ω	1Meg	▪ 22K	.1Ω	0Ω	• 90Ω	550K	†33K	†6600Ω
V6	6BN6	• 500Ω	3.3Ω	0Ω	.1Ω	▪ 4700Ω	7Ω	†330K		
V7	6DG6GT	0Ω	0Ω	†900	†750Ω	500K	NC	.1Ω		
V8	12AU7	▪45K	2.7Meg	0Ω	.1Ω	.1Ω	▪ 27K	190K	0Ω	0Ω
V9	12BH7	ǂ2200Ω	1.5Meg	• 3300Ω	0Ω	0Ω	ǂ2Meg	•1.1Meg	47K	.1Ω
V10	6SN7GTB	480K	ǂ70K	0Ω	1.4Meg	•† 60K	400K	0Ω	.1Ω	
V11	6DQ6	TP	0Ω	NC	†9000Ω	470K	TP	.1Ω	0Ω	TOP CAP ǂ37Ω
V12	6AX4GT	NC	NC	¶	NC	†52Ω	NC	.1Ω	0Ω	
V13	1B3GT		PINS	1 THRU 8	HAVE	INFINITE	RESISTANCE			TOP CAP ǂ 580Ω
V14	5U4GB	NC	60K	TP	20Ω	TP	17Ω	NC	60K	
V15	21ALP4A	0Ω	22K	PIN 6 40K	PIN 10 40K	PIN 11 • 330K	PIN 12 .1Ω			

† MEASURED FROM PIN 2 OF V14.
▪ MEASURED FROM PIN 8 OF V7.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
ǂ MEASURED FROM PIN 3 OF V12.
NC NO CONNECTION
TP TIE POINT.



TUBE PLACEMENT CHART



UHF-VHF Tuner Part No. CL-5220-1

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1957

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO

ALTERNATE TUNER SCHEMATIC

OLYMPIC MODELS 1CA70, U, 1CB71, U, 1CB72, U, 1CB77, U, 1KA80, U, 1KB87, U, 1KB88, U, 1TA60, U, 1TB61, U, 4CE75, U, 4CF76, U, 4KF84, U (Ch. DA, DAU, DB, DBU, DE, DEU, DF, DFU)

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6BS8	
V2	Mixer-Oscillator	6C4A	
V3	1st Video IF Amp	6U8	
V4	2nd Video IF Amp	6CB6	
V5	Video Amp., Sound IF Amp	6AW8	
V6	Audio Det.	6BN6	
V7	Audio Output	6U8GT	Note 1

ITEM No.	USE	TYPE	NOTES
V8	Sync Sep.-Sync Amp	12AU7	
V9	Vert. Mult. Vert. Output	12BH7	
V10	Horiz. AFC-Horiz. Osc.	6SN7GTB	
V11	Horiz. Output	6DS6	Note 2
V12	Damper	6AX4GT	
V13	HV Rectifier	1B3GT	
V14	LV Rectifier	5U4GB	Note 3

Note 1. Some versions may use a 6W6GT in this application.
Note 2. Some versions may use a 6CU8 in this application.
Note 3 Some versions may use a 5U4G in this application.

PICTURE TUBE

ITEM No.	REPLACEMENT DATA			NOTES
	OLYMPIC PART No	GENERAL ELECTRIC PART No.	SYLVANIA PART No	
V15	21ALP44 21ALP48	21ALP44 1 21ALP48 1	21ALP44 1 21ALP48 2	1 Aquadized 2 Silver screen #5
	21ALP44 21CP24	21ALP44 1 21CP24	21CP24 2 21CP24	
		21ADP44 2		

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA					
	- MF	VOLT	OLYMPIC PART No	AEROVOX PART No	CORNELL DUBILIER PART No	MALLORY PART No	P-R-MIND PART No	SANGAMO PART No	SPRAGUE PART No
C1A	80	350	CO3340	PR3-025	WT830	TMD-44 TD 4-4350	D-190 FM-4504	TVL-4711.3
B	80	350		PR3-035				
C	150	150						
C2	30	250	CO3068-1	PR3250-30	PR3-025	TC59	TD-30-450	S-168	TVA-1713
A	30	200	CO3834	PR2-200	BOB76	TM2-17	S-150	TVA-1716
B	25	50					MT-25100		
C4	10	450	CO4022	PR2450-10	BBD45	TC72	TD-10-450	FM-4510	TVA-1706

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP	VOLT	OLYMPIC PART No	AEROVOX PART No	CENTRALAB PART No	CORNELL DUBILIER PART No	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	4.0					C1045C				
C6	8			NP0-SI 1.5		C1015C	TCO-1.5	ET-5815	5TCCB-V15	
C7										
C8	1000			ET-001	MPT-1000				503C-D1	
C9	1000			ET-001	MPT-1000				503C-D1	
C10	33			TCZ-R5						
C11	15			NP0-SI 5	TCZ-15	C1045C	TCO-15		5TCC-G15	
C12	19			TCZ-R5						
C13	3			NP0-SI 1 0	TCZ-1R5	C1015C	TCO-1.5	ET-5815	5TCCB-V15	
C14										
C15										
C16										
C17	2.1			NP0-SI 2.2	TCZ-2R2	C1012C	TCO-2.2		5TCCB-V22	
C18	1000			BPD-001	DD-101	BYA8DX	ED-1000	DC521	5EK-D1	
C19										
C20	1000			BPD-001	DD-101	BYA8DX	ED-1000	DC521	5EK-D1	M1000
C21	10			NP0-SI 10	TCZ-10	C1045C	TCO-10	ET-541	5TCC-G1	
C22	1000			EF-001	MPT-1000				503C-D1	
C23	1000			EF-001	MPT-1000				503C-D1	
C24	1000			BPD-001	DD-101	BYA8DX	ED-1000	DC521	5EK-D1	
C25	1000			EF-001	MPT-1000				503C-D1	
C26	1000			EF-001	MPT-1000				503C-D1	
C27	47			NP0-SI 47	TCZ-47	C1045C	TCO-47		5TCC-G47	NP0
C28	1000		C04857	BPD-001	DD-101	BYA8DX	ED-1000	DC521	5EK-D1	N1500
C29	330		CO2-331M	BPD-0033	DD-331	LU7T33	ED-330	UC-5333	5GA-T33	
C30	1000		CO2-102K	BPD-001	DD-102	BYA8DX	ED-1000	DC521	5EK-D1	
C31	470		CO2-471M	BPD-0047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C32	500		C04857	BPD-001	DD-101	BYA8DX	ED-1000	DC521	5EK-D1	
C33	1000		C04857	BPD-001	DD-101	BYA8DX	ED-1000	DC521	5EK-D1	
C34	18		C04826		D-180	L20G8	ED-18	UC-5418	5GA-Q18	Note 1
C35	4.7		CO3083	NP0-SI 4.7	C1045C	TCO-4.7	ET-5847	CC5T-4.7	5TCCB-V47	
C36	.047	400		BPD-05	DF-503	CU8B4S7		GEM-4147	47M-S47	
C37	330		CO2D-331K							NP0
C38	100		CO2D-101		TCL-100					N1500
C39	.1	400		P4S5N-1	DF-104	CU84P1		GEM-401	47M-P1	
C40	.047	400		BPD-09	DF-503	CU8B4S7		GEM-4147	47M-S47	
C41	.022	600		BPD-03	DF-503	CU8B4S22	ED-03	GEM-4123	47M-S22	Note 3
C42	10		CCD-100K	BPD-00001	DD-100	CU5AL	ED-10	UC-5341	5GA-Q	
C43	6.8		C04830	NP0-SI 6.8	DF-5R8	C1056C	TCO-6.8	ET-5866	5TCCB-V68	NP0-Note 3
C44	330		CO2-331M	BPD-0033	DD-331	LU7T33	ED-330	UC-5333	5GA-T33	
C45	470			BPD-0047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C46	5000		C0D-503X	BPD-005	DD-502	BYA10DS	ED-005	DC525	5HK-D5	
C47	5000		C0D-503X	BPD-005	DD-502	BYA10DS	ED-005	DC525	5HK-D5	
C48	5000		C0D-503X	BPD-005	DD-502	BYA10DS	ED-005	DC525	5HK-D5	
C49	5000		C0D-503X	BPD-005	DD-502	BYA10DS	ED-005	DC525	5HK-D5	
C50	10000		CCD503X	BPD-03	DD-103	BYA8DS	ED-01	DC511	5HK-S1	
C51	1000		C04857	BPD-005	DD-103	BYA8DX	ED-1000	DC521	5HK-D1	
C52	.33	300		P3S5N-33		CU3BP33		GEM-303	47M-P33	
C53	6000			BPD-004	D6-602	BYA10D4	GP-4000	UC-5340	5HK-D4	Note 1
C54	1000		C04857	BPD-001	DD-102	BYA8DX	ED-1000	DC521	5EK-D1	
C55	1000		C04857	BPD-001	DD-102	BYA8DX	ED-1000	DC521	5EK-D1	
C56	1000		C04857	BPD-001	DD-102	BYA8DX	ED-1000	DC521	5EK-D1	
C57	.002	600		BPD-002	D6-202	CU8BD2	ED-002	GEM-623	47M-D2	Note 4
C58	100				TCL-100					N1500
C59	.022	600		BPD-03	DF-303	CU8B4S3	ED-03	GEM-413	47M-S3	
C60	.0047	600		BPD-0047	D6-473	CU8BD47	GP-4700	GEM-5247	47M-D47	
C61	.047	400		BPD-047	DF-503	CU8B4S7		GEM-4147	47M-S47	
C62	.1	600		P4S5N-1	DF-104	CU84P1		GEM-401	47M-P1	
C63	.01	1000		P3S5N-01	DD-105	CU3BD1	ED-01	GEM-1013	47M-S1	
C64	47			1469-000047		22RS47			M5-447	10%
C65	47			1469-000047		22RS47			M5-447	10%
C66	.047	400		BPD-05	DF-503	CU8B4S7		GEM-4147	47M-S47	
C67	.047	400		BPD-05	DF-503	CU8B4S7		GEM-4147	47M-S47	
C68	.047	400		BPD-05	DF-503	CU8B4S7	ED-03	GEM-4147	47M-S47	
C69	.47	300	C08T9	P2S5N-47		CU3BP47		GEM-2047	47M-P47	
C70	120			1469-00033		22RS47			M5-312	10%
C71	.47				TCZ-R5					
C72	47			1469-000047		22RS47			M5-447	10%
C73	.01	600		BPD-01	DF-103	CU8B4S1	ED-01	GEM-4101	47M-S1	
C74	.001	600		BPD-001	DD-101	CU5BS1	ED-1000	GEM-632	47M-D1	

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont)

ITEM No.	RATING		REPLACEMENT DATA							NOTES
	CAP	VOLT	OLYMPIC PART No	AEROVOX PART No	CENTRALAB PART No	CORNELL-DUBILIER PART No	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	
C75	680			1467-00068		1NS768			M3-368	
C76	100-50		CT3526							
C77	047	400		BPD-05	DF-503	CU8B4S47		GEM-4147	47M-S47	
C78	10	400		P4S5N-1	DF-104	CU84P1		GEM-401	47M-P1	
C79	.0000			BPD-01	DD-103	BYA8DI	ED-01	DC511	5HK-S1	Note 5
C80	100	3000	CO3781	HV3D-100	D3D3-100	HV3B3D01		DC3G46	30GA-T1	10%
C81	68	2000	CO4012	HV3D-68	D3D3-680	HVA20D68		DC3G468		
C82	01	600		BPD-01	DF-103	CU8B4S1	ED-01	GEM-511	47M-S1	
C83	22	200		P2S5N-22		CU3BP22		GEM-3022	47M-P22	Note 1

Note 1. Not used in some versions.
Note 2. Some versions may use a .03MFD @ 400V in this application.
Note 3. Some versions may use a 3.3MMF in this application.
Note 4. Some versions may use a 330MMF in this application.
Note 5. Some versions may use a 1000MMF in this application.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	OLYMPIC PART No	CENTRALAB PART No	CLAROSTAT PART No	IRC PART No	MALLORY PART No	
R1A	500K	1	PTK3615	B-50	A47-500K-Z	Q13-133	U48	Volume
B	Shaft			Not Req	KSB-3	Not Req.	Not Req.	
C	Switch			KB-1	BWE-12	78-1	U8-26	
R2A	1 5Meg	1	PTK3616-1	AB-742	A47-1 5Meg-S	Q1-138	U155	Vert. Hold
B	Shaft			AK-4	KSB-3	Not Req.	Not Req.	
R3A	100K	1	PTK3617-1	B-42	A47-100K-S	Q1-129	U41	Horiz Hold
B	Shaft			Not Req.	KSB-3	Not Req.	Not Req.	
R4A	1 5Meg	1	PTK3616-1	AB-742	A47-1 5Meg-S	Q1-138	U155	Brightness
B	Shaft			AK-4	KSB-3	Not Req.	Not Req.	
R5A	1500Ω	1	PTK3618	B-6	A47-1500-S	Q47-109	U5	Contrast
B	Shaft			Not Req.	KSB-3	Not Req.	Not Req.	
R6A	2 5Meg	1	PTK-5008	AB-743	A47-2 5Meg-S	Q1-213	TA25L	Vert. Height
B	Shaft			Not Req.	KSB-3	TM2-KH	Not Req.	
R7A	5000Ω	1	PTK-3619-1	B3-10	A47-5000-S	Q1E-114	TA25L	Vert. Linearity
B	Shaft			Not Req.	KSB-3	TM2-KH	Not Req.	
R8	400Ω	2	PT3611		S9-500		FL-500	Buzz - wire wound

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		REPLACEMENT DATA	
	OHMS	WATT	OLYMPIC PART No.	IRC PART No.
R9	330Ω			BTS-330
R10	330Ω			BTS-330
R11	470Ω			BTS-470
R12	8200Ω			BTS-8200
R13	1Meg			BTS-1Meg
R14	750K			BTS-750K
R15	100K			BTS-100K
R16	220K			BTS-220K
R17	3300Ω			BTS-3300
R18	15K			BTS-15K
R19	4700Ω			BTS-4700
R20	680Ω	1		Note 1
R21	1Meg			BTS-1Meg
R22	680Ω			
R23	18K			BTS-18K Note 11
R24	330Ω			
R25	47Ω			BTS-47
R26	33K 5%			BTS-33K 5% Note 3
R27	18K			BTS-18K Note 3
R28	330Ω			BTS-330
R29	180Ω			BTS-180
R30	6200Ω			BTS-6200
R31	1.5Meg			BTS-1.5Meg
R32	1Meg			BTS-1Meg
R33	1500Ω			BTS-1500
R34	33K			BTS-33K
R35	12K			BTS-12K
R36	3300Ω	2		BTS-3300
R37	3300Ω	2		BTS-3300
R38	33K	2		BTS-33K
R39	33K			BTS-33K
R40	150K			BTS-150K
R41	1Meg			BTS-1Meg
R42	22K			BTS-22K
R43	47K			BTS-47K
R44	1000Ω			BTS-1000
R45	330K			BTS-330K
R46	4700Ω	1		BTC-4700
R47	150Ω			BTS-150
R48	1Meg			BTS-1Meg
R49	1Meg			BTS-1Meg
R50	700Ω	10		1 3/4-A-700
R51	560K 5%			BTS-560K 5% Note 6
R52	2.2Meg			BTS-2.2Meg
R53	82Ω			BTS-82

ITEM No.	RATING		REPLACEMENT DATA	
	OHMS	WATT	OLYMPIC PART No.	IRC PART No.
R54	150K			BTS-150K
R55	82K			BTS-82K
R56	4700Ω			BTS-4700 Note 8
R57	22K			BTS-22K
R58	82K			BTS-82K
R59	82K			BTS-82K
R60	680K			BTS-680K Note 6
R61	12K			BTS-12K
R62	1.5Meg			BTS-1.5Meg
R63	150K			BTS-150K
R64	4.7Meg			BTS-4.7Meg Note 7
R65	4.7Meg			BTS-4.7Meg Note 7
R66	560Ω			BTS-560
R67	560Ω			
R68	560Ω			
R69	2700Ω			BTS-2700
R70	1.5Meg			BTS-1.5Meg
R71	2.7Meg			BTS-2.7Meg Note 8
R72	1000Ω	3		BTS-1000
R73	47K	1		BTS-47K
R74	150K			BTS-150K
R75	330K			
R76	820K	1		
R77	330K 5%	1		
R78	82K 5%	1		
R79	2900Ω			
R80	180K 5%	1		BTS-180K 5%
R81	820Ω			
R82	180K			
R83	100K			
R84	33K	1		BTS-33K
R85	150K	1		BTS-150K
R86	470K			BTS-470K
R87	39Ω			BTS-39 Note 9
R88	1800Ω	2		BTS-1800
R89	3300Ω	2		BTS-3300
R90	47K	1		BTS-47K
R91	100K			BTS-100K
R92	150K			BTS-150K Note 10
R93	33Ω	1		BTA-33
R94	4700Ω			
R95	2.2Ω	1		BW1-2.2
R96	100K	1		BTA-100K
R97	47K			BTS-47K Note 3

Note 1. Some versions may use a 1000Ω in this application.
Note 2. Some versions may use a 12K in this application.
Note 3. Not used in some versions.
Note 4. Some versions may use a 470K in this application.
Note 5. Some versions may use a 390Ω in this application.
Note 6. Some versions may use a 1Meg in this application.
Note 7. Some versions may use a 10Meg in this application.
Note 8. Laterproductions may use a 2.2Meg, 1W in this application.
Note 9. Some versions may use a 47Ω in this application.
Note 10. Some versions may use a 330K in this application.
Note 11. Some versions may use 47K in this application.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA				NOTES
	PRI.	SEC. 1	SEC. 2	SEC. 3	OLYMPIC PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	U.T.V.AC	530VCT	5V	6.3V	TR4007		P-3230 ①	P-8334 ②	26R88 ③	R-54BC

① Parallel and phase 6.3V @ 6A filament windings. Tape 6.3V @ 1.25A filament winding.
② Tape 6.3V @ 1.2A filament winding. Fabricate mounting.
③ Parallel and phase 6.3V @ 5A filament windings. Tape 6.3V @ 1.2 A filament winding.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA								
		OLYMPIC PART No	Halldorson PART No	Merit PART No	RCA TYPE No	Ram PART No	Stancor PART No	Thordarson PART No	Triad PART No
T2	Horiz. Output	TR3599-4	FB41L1*1	HVO-471 1 *4			HO-257 1 *4	FLY-16 1 *4	
	Alt. Horiz. Output	TR3599-3	FB41L1*1	HVO-471 1 *3			HO-257 1 *3	FLY-16 1 *3	
T3	Vert. Output	TR3569-C	Z1900 1	A-3139 1	226T1 1	V312 1	A-8141 1	28S75 2	A-109X 1
Alt. Vert. Output		TR-3589	Z1900 2	A-3059 1	226T1 1	V312 1	A-8141 1	28S76 2	A-109X 1
T4A	Yoke-Horiz. (DM3)	CL-3600-3	DF507 1	MDF-92 4	235D1 4	V90F10/43	DY-16A 4	Y-16 4	Y-42 & NW3
B	(90°) Vert. (60.5MH)					4			

① Drill new mounting hole(s).
② Use 18 to 1 turns ratio.
③ Remove pin 1 of yoke socket from ground. Connect red lead to junction of capacitor (C4), resistor (R73), and height control . Connect this point to pin 7 of yoke socket. Connect green lead to pin 1 of yoke socket.
④ Use original horizontal yoke damping network if necessary.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
9	9	9			12	9	
8	8	8			11	7	
5	5	5			2	7	
2	NC	NC			See Note ③ NC	6	
3	3	3			1	3	
1	1	1			8	1	
Special Notes	①	① & ②			③	④	

① Install new damping network consisting of 1000Ω resistor in series with 68MMF, 4KV capacitor across horizontal yoke terminals #3 and #7.
② Remove resistor (R93) from circuit.
③ Jumper terminals #7 and #8.
④ Jumper terminals #1 and #7.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA					NOTES
	PRI.	SEC.	OLYMPIC PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T5	2400Ω	3-4Ω	TR3766-1	Z1501	A-3035	A-3332	26S58 ①	S-13X	① Drill one new mounting hole.

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	OLYMPIC PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	SIC4343 ①	4A07	① Used in Models 17A60, U, 17T61, U, 13C868, U
	5"	PM	3-4Ω	SIC7188-3 ②	5A07	② Used in Models 17A70, U, 17B71, U, 17C72, U,
	6"	PM	3-4Ω	SIC9006-3 ③	6A81	4CE78, U, 4C715, U, 4C716, U
	8"	PM		SIC8561 ④		③ Used in Models 17A80, U, 13Z867, U, 4KF84, U
	6"X 9"	PM		SIC8276 ⑤		④ Used in Models 17C871, U
						⑤ Used in Models 17K885, U

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA				NOTES
		OLYMPIC PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	
L1	RF Choke	CL1535	19-3098	TV-180	6176	36 Microhenries
L2	1st. Video IF	CL4753		TV-131	6325	
L3	Fil. Choke	CL3427	19-1061		6804	1.8 Microhenries
L4	2nd. Video IF	CL4611	17-4522	TV-130	6219	
L5	3rd. Video IF	CL4611	17-4523	TV-130	6219	
L6	RF Choke	CK4125				Note 1 - 2.8 Microhenries
L7	Series Peaking Coil	CL3358	19-3180 *	TV-184 *	6180 *	180 Microhenries wound on 12K resistor
L8	Shunt Peaking Coil	CL3814	19-3560 &	TV-188 &	6174 &	560 Microhenries, wound on 1Meg resistor
L9	Series Peaking Coil	CL3403	19-3300 &		6165 &	330 Microhenries, wound on 1Meg resistor
L10	Shunt Peaking Coil	CL3814	19-3560 &	TV-188 &	6174 &	560 Microhenries, wound on 1Meg resistor
L11	1st. Sound IF	CL3414				Includes 18MMF capacitor
L12	2nd. Sound IF	CL4021	17-3413			Tapped @ .8Ω, 1.5Ω
L13	Quadrature Coil	CL3403-1			146R	Includes capacitor
L14	RF Choke	CK4415			6810	6.8 Microhenries - Note 1

Note 1. Not used in some versions.
* Parallel with 12K resistor.
& Parallel with 1Meg resistor.

DRC Part #CL-1

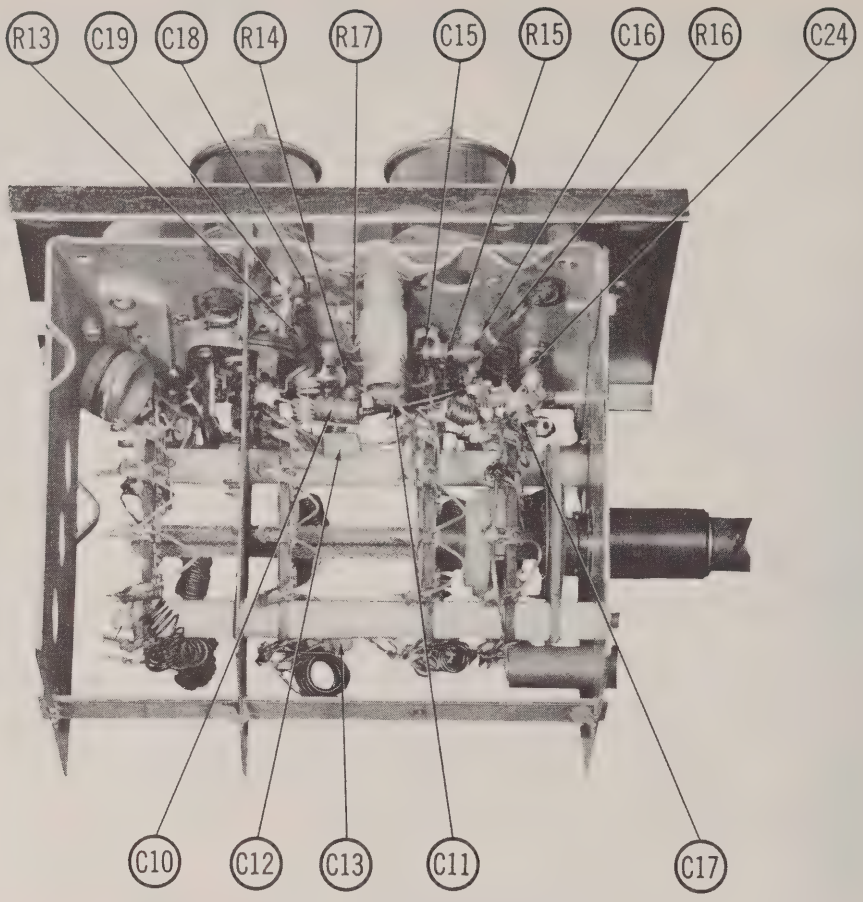
TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA						NOTES
	PRI.	SEC.	OLYMPIC PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No	Ram PART No.	
L15			TR2394	20-1602	TV-185	6183	208N1	R-100	HS-3

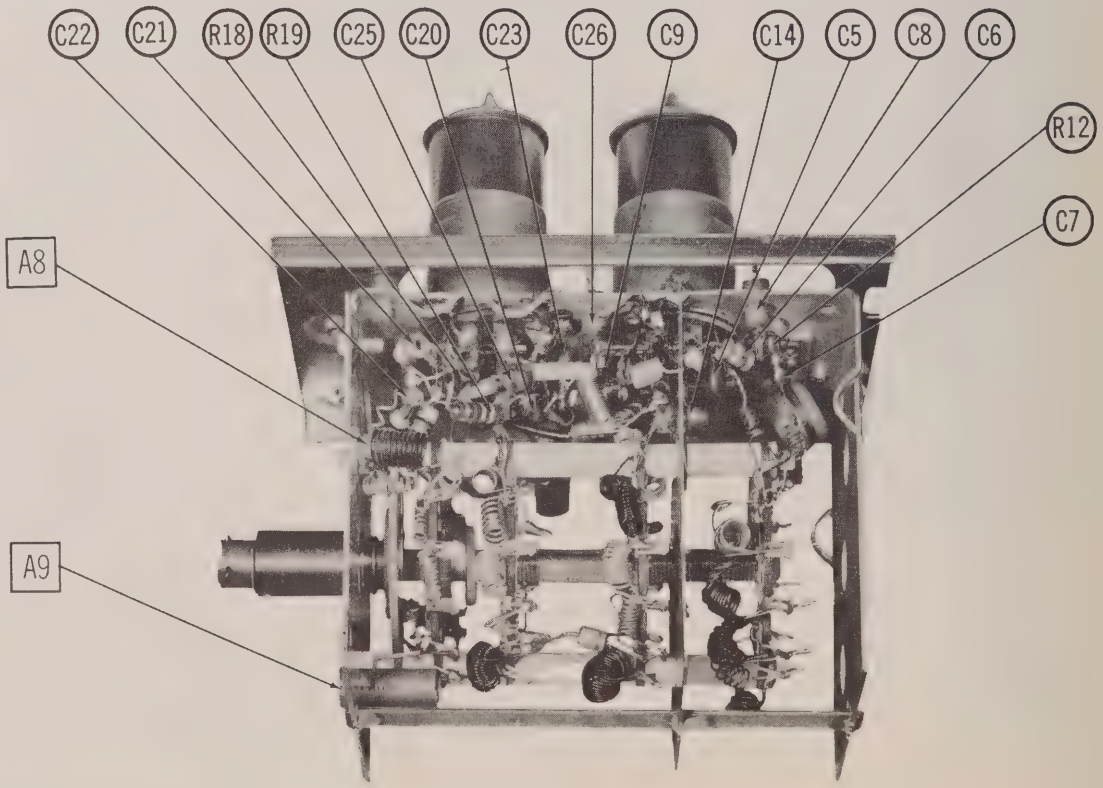
FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 C_{AT}	OLYMPIC PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
L16	215A	52Ω	.6 Hy.	CK4047	CS037 ①	C-2998 ①	C-2326 ①	DEC44 ①	C-24X ①	

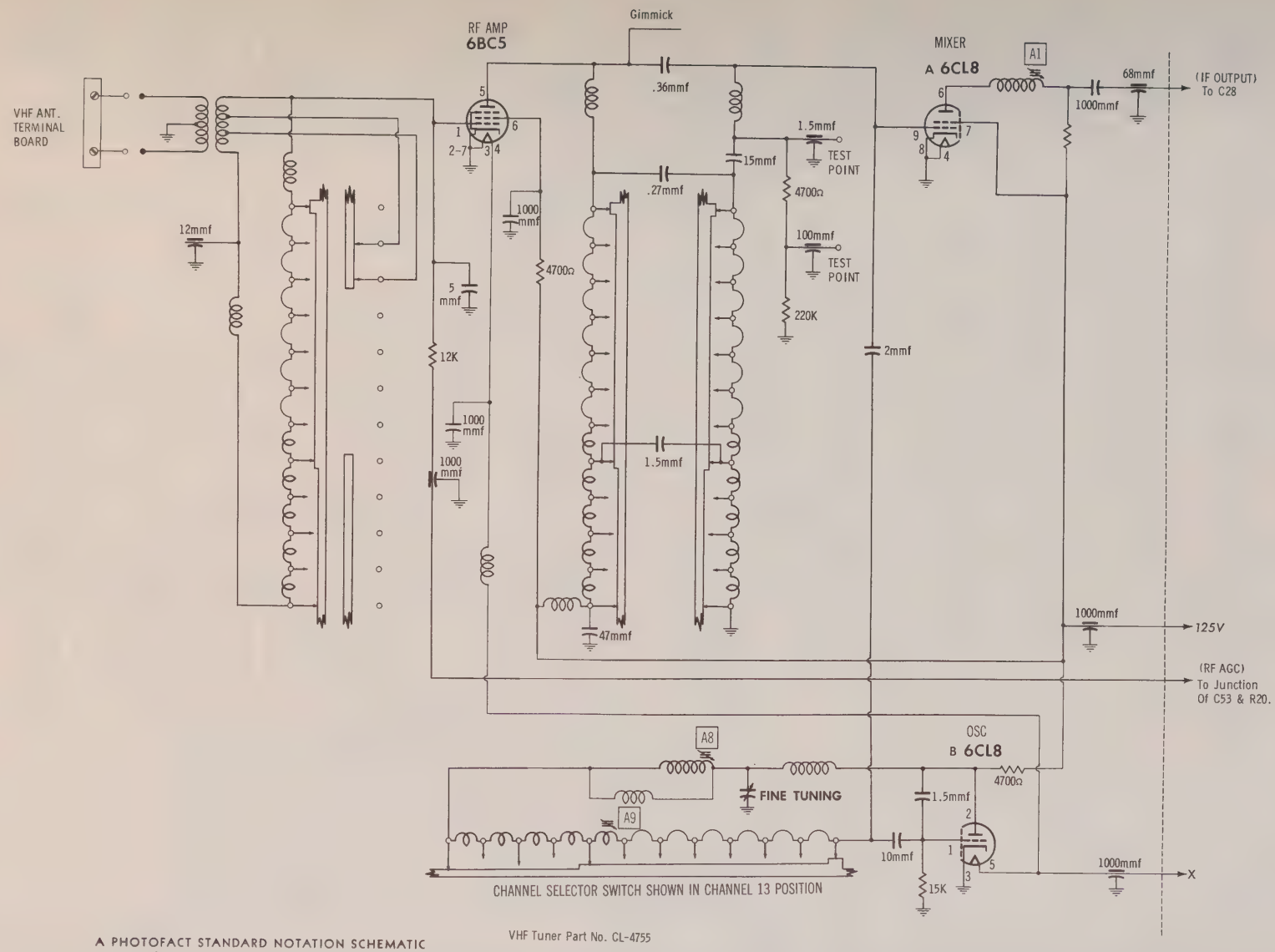
① Drill one new mounting hole.



RF TUNER-LEFT SIDE



RF TUNER-RIGHT SIDE



A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1957

VHF Tuner Part No. CL-4755

ALTERNATE TUNER SCHEMATIC

PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	OLYMPIC PART No.	REPLACEMENT DATA	
K1	Vert. Integrator	2000MMF, 5000MMF, 5000MMF, 22K, 8200Ω, 8200Ω	PC2435	Aerovox Centralab Cornell-Dubilier Erie Sprague	PA110 PC-100 115TM1 1405-01 V-1

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			OLYMPIC PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	3/8A 250V	FU3958 *	FH3852	312.375 (3AG 3/8A)	357001	AGC 3/8	4406

* Alternate part #FU4345.

CRYSTAL DIODES

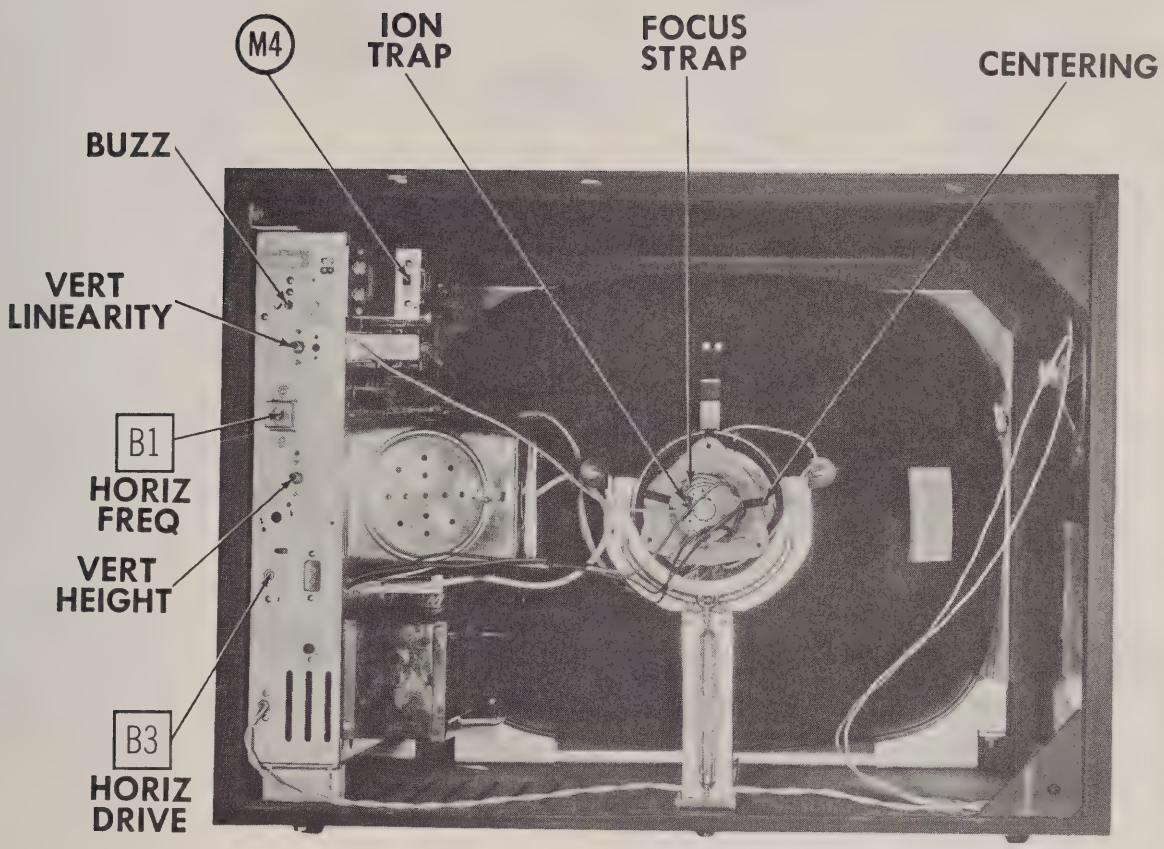
ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		OLYMPIC PART No.	CBS PART No.	SYLVANIA PART No.	
M2	1N60 *		1N60	1N60	Video Det. (Pigtail)

* A 1N64 may be used in some versions.

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M3	Tuner	CL4756	VHF - Ch. DB, DF
	Tuner	CL4755	VHF - Ch. DA, DE
	Tuner	CL5220-1	UHF-VHF - Ch. DAU, DBU, DEU, DFU
	Tuner	CL5445	VHF - Ch. DA only(interchangeable with CL4755)
M4	Switch	SW2966-1	Local-Distant - Slide Type (DPDT)
M5	Centering Device	PP4507-1	Used in Ch. DA, DAU, DB, DBU
	Focus Magnet	PP4418	Used in Ch. DE, DEU, DF, DFU
M6	Ion Trap	PP2248	
	Safety Glass	PP3656	Clear - Models 1TA60, U, 1CA70, U, 1KA80, U
	Safety Glass	PP3656-1	Tinted - Models 1TB61, U, 1CB71, U, 1CB72, U, 1CB77, U, 1KB87, U, 1KB88, U
	Safety Glass	PP3939-1	Tinted - Models 4CE75, U, 4CF75, U, 4CF76, U, 4KF84, U
	Mask	PP3646-1	Green - Models 1TA60, U, 1CA70, U
	Mask	PP3646-2	Gold - Models 1KA80, U, 1TB61, U, 1CB71, U, 1CB72, U, 1CB77, 1KB87, U, 1KB88, U
	Mask	PP3938	Gold - Models 4CE75, U, 4CF75, U, 4CF76, U, 4KF84, U
	Knob	KN5182	Channel Selector (Mahogany) Ch. DA, DB, DE, DF
	Knob	KN5182-1	Channel Selector (Tan) Ch. DA, DB, DE, DF
	Knob	KN5185-1	Channel Selector (UHF-VHF) Ch. DAU, DBU, DEU, DFU
	Knob	KN5186	Dial (Vernier) (UHF), Ch. DAU, DBU, DEU, DFU
	Knob	KN5236	Tuner (Vernier) (UHF), Ch. DAU, DBU, DEU, DFU
	Knob	KN5183	Fine Tuning - Ch. DA, DB, DE, DF
	Knob	KN5184-1	Fine Tuning - Ch. DAU, DBU, DEU, DFU
	Knob	KN5188	Control (Mahogany)
	Knob	KN5188-1	Control (Tan)
	Cabinet	CA4844	Models 1TA60, 1TB61
	Cabinet	CA5011	Models 1CA70, 1CB71
	Cabinet	CA5167	Models 1KA80, 1KB87
	Cabinet	CA5192	Model 4CE75
	Cabinet	CA5194	Model 4CF76
	Cabinet	CA5238	Model 4KF84
	Cabinet	CA5176	Model 1CB72
	Cabinet	CA5243	Model 1CB77
	Cabinet	CA5244	Model 1KB88

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. At full clockwise position of the horizontal hold control, a blanking bar or picture jitter should be evident.
2. At full counter clockwise position of the horizontal hold control, the picture should lose sync with $4\frac{1}{2}$ to 5 diagonal bars sloping down to the left. If the picture remains in sync at either extreme setting of the horizontal hold control, switch off station and back again so that the picture falls out of sync.

Adjust the horizontal drive trimmer (B3) counter clockwise as far as possible without the presence of vertical white lines or compression near the center of picture. If neither of these conditions appear, adjust B3 for a SLIGHTLY wider picture than necessary to fill the picture mask horizontally.

Turn the set on and tune in a TV station, preferably with a test pattern. Connect a short jumper across terminals "C" and "D" of the horizontal oscillator transformer (L15).

Set the horizontal hold control fully clockwise. Adjust the horizontal frequency slug (B1) until the picture falls into sync. Remove the jumper from L15. Connect the vertical amplifier of the scope to terminal "C" of L15. Low side to chassis. Adjust the horizontal waveform slug (B2) for equal peaks of the waveform similar to Fig. 4. If necessary, during adjustment of B2 keep the picture in sync with the horizontal hold control or B1. Remove the scope and retouch B1 for the following conditions.

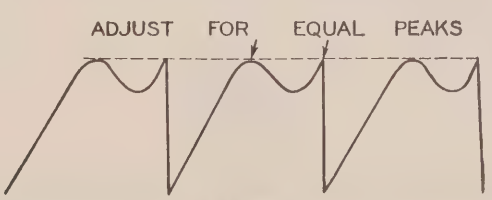


FIG. 4

RCA VICTOR
MODEL 7-HFR-1 (Ch. RC1168, RS161)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

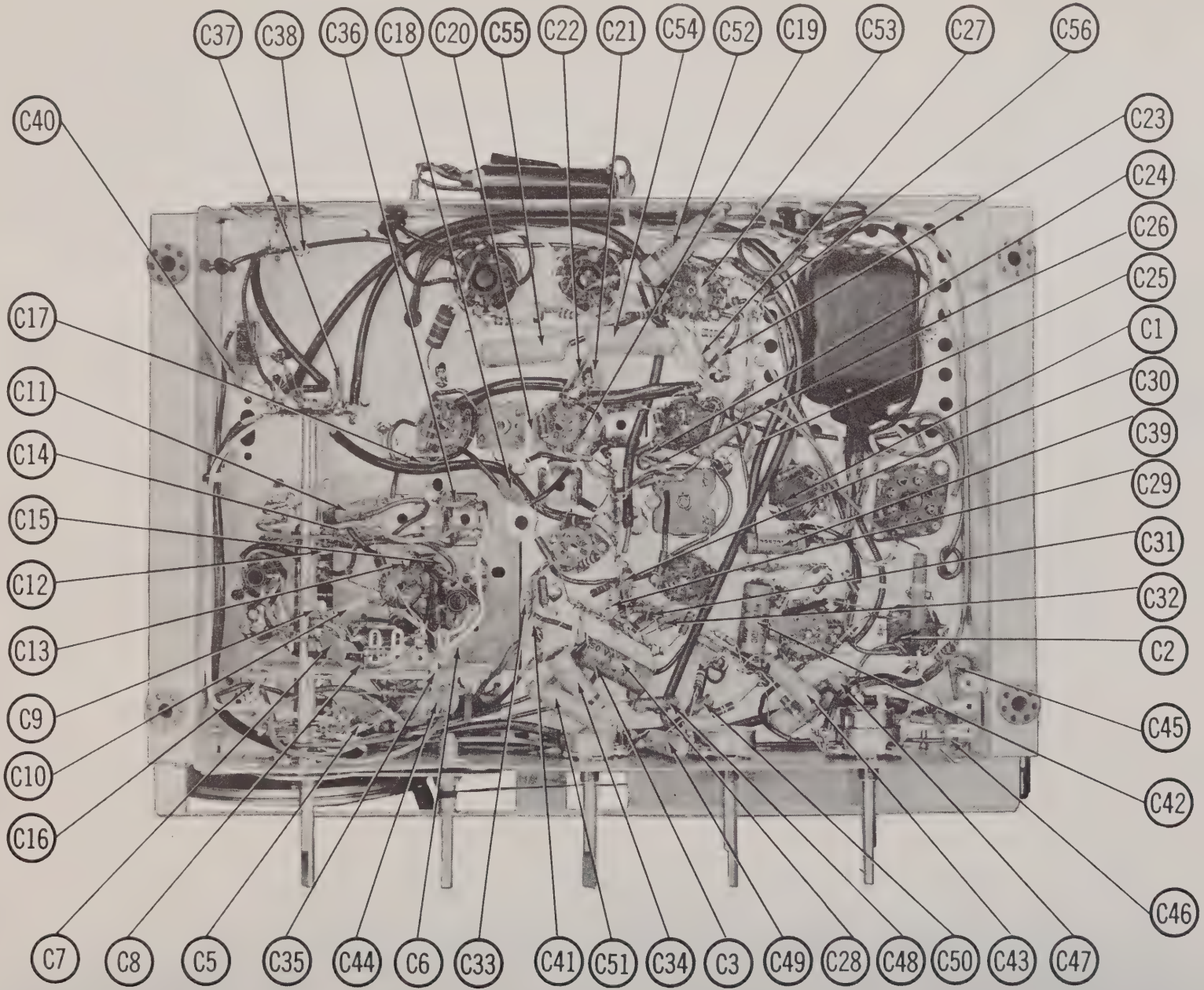
RCA VICTOR
MODEL 7-HFR-1 (Ch. RC1168, RS161)

TRADE NAME	RCA Victor Model 7-HFR-1 Radio Chassis RC-1168 — Record Changer RP-205-5 Recorder Amplifier Chassis RS-161 — Tape Transport Chassis TR-2-5
MANUFACTURER	RCA Victor & "Victrola" Div., Radio Corp. of America, Camden 8, N.J.
TYPE SET	AC Operated FM-AM Receiver With Tape Recorder and 4 Speed Automatic Record Changer
TUBES	Receiver: Thirteen Recorder: Five
POWER SUPPLY	110-120 Volts AC-60 Cycle RATING Receiver .92 Amp. @ 117 Volts AC (105W) Recorder .28 Amp. @ 117 Volts AC (25W) (less motor)

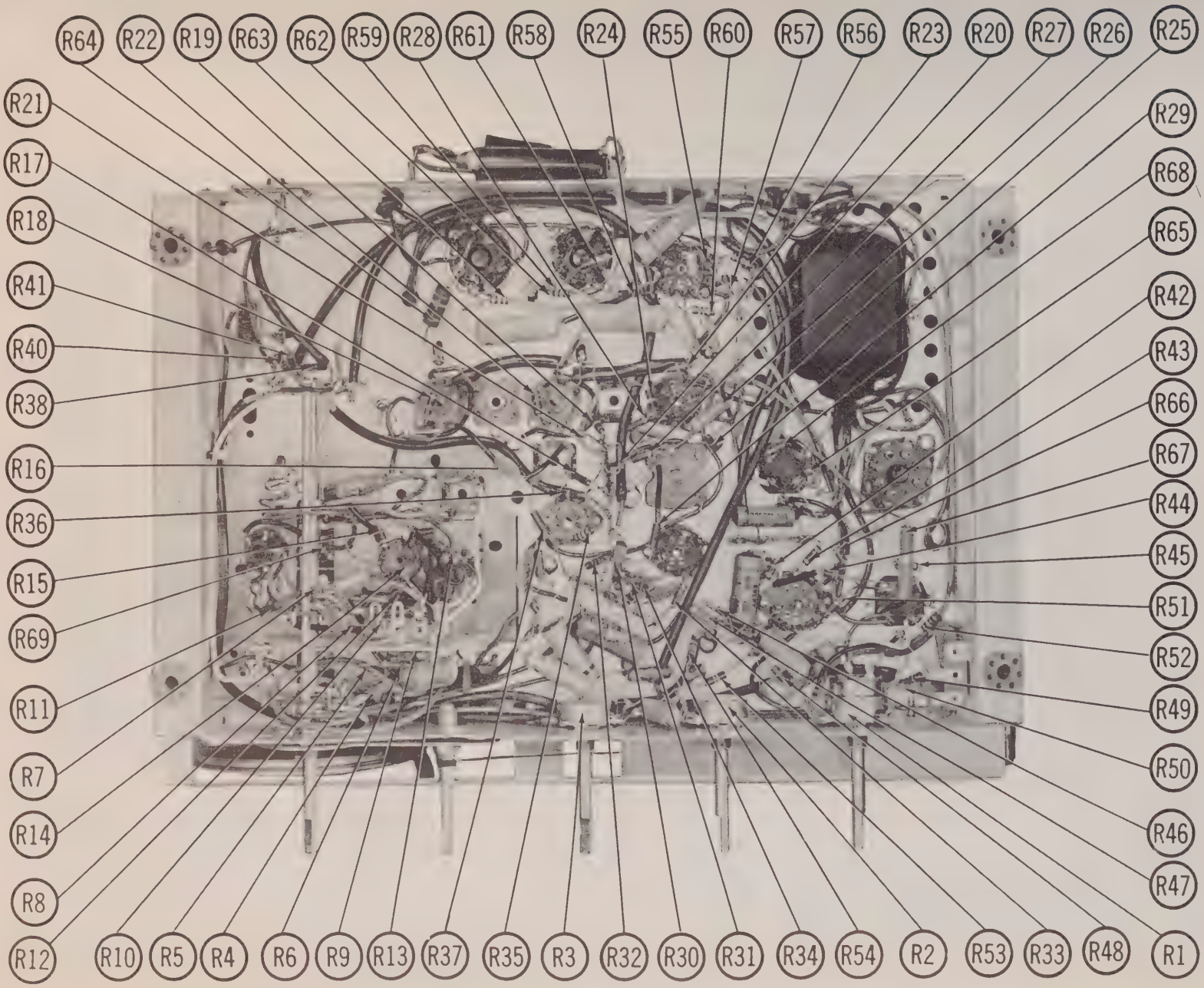
FOR SERVICE INFORMATION ON RECORD CHANGER - SEE RCA RP-205 SERIES - PHOTOFACT SET 358-FOLDER 10.
FOR SERVICE INFORMATION ON TAPE TRANSPORT MECHANISM - SEE RCA 7-TR-2 - PHOTOFACT SET 340 - FOLDER 16.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

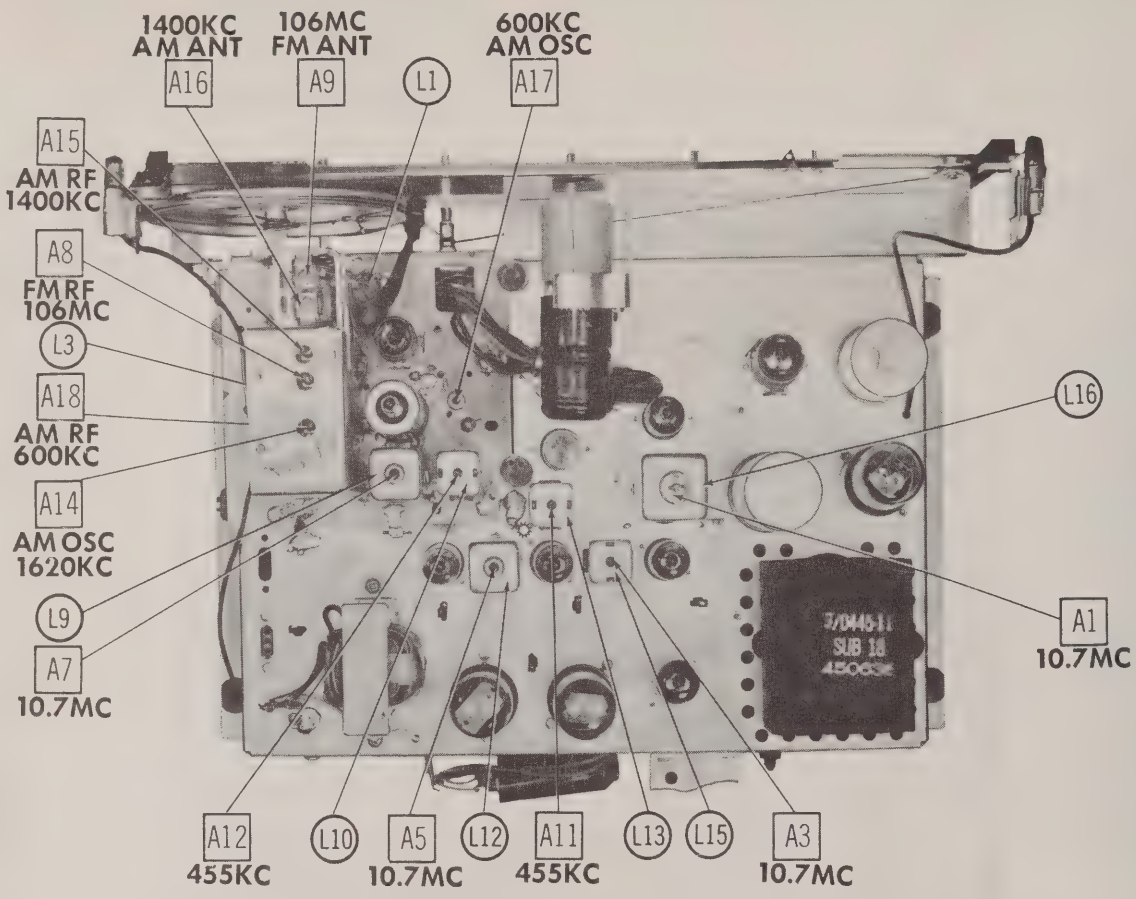


CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

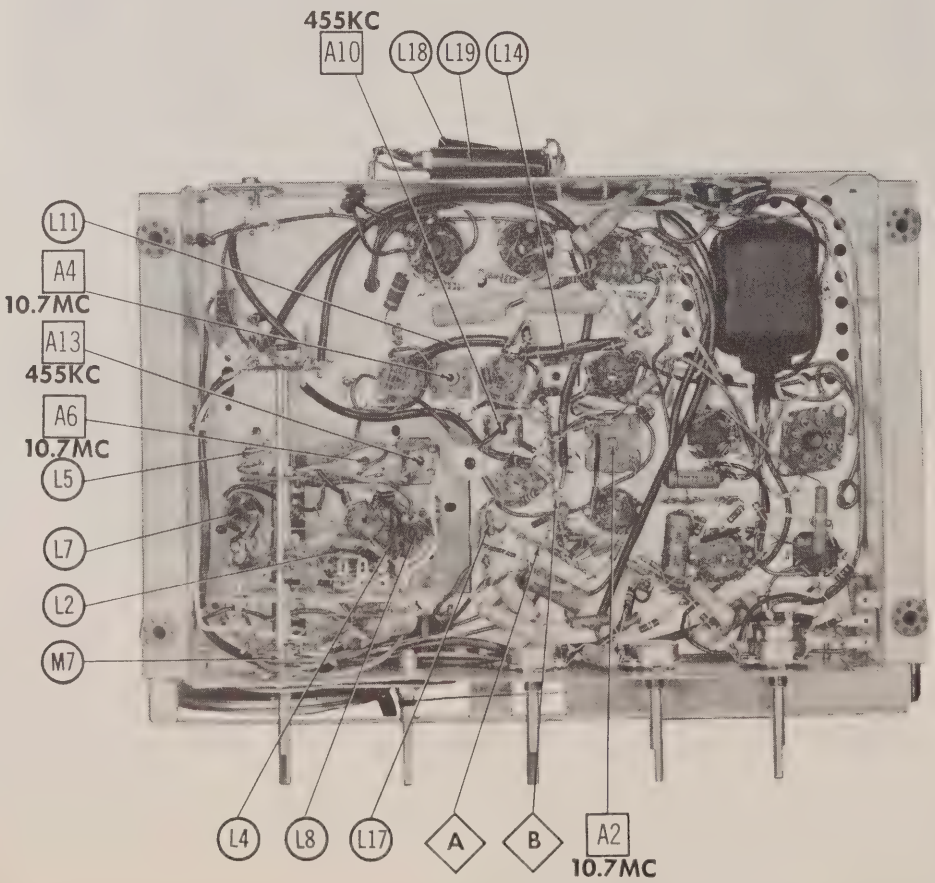


CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO



CHASSIS TOP VIEW - ALIGNMENT IDENTIFICATION



CHASSIS BOTTOM VIEW - ALIGNMENT & INDUCTOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Use an insulated alignment screwdriver for adjusting.
Tone control to mid-range.
Alignment should be performed in order given.
Refer to Fig. 3 for dial pointer adjustment.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

If necessary, to provide accurate maximum deflection on VTVM, shunt primary winding with a 270Ω resistor while adjusting secondary winding. Reverse process for adjustment of primary winding. Do not shunt more than one winding at a time.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	10000 MMF	High side to pin 1 (grid) of 6AU6 (V5). Low side to chassis.	10.7MC (Unmod)	FM	Point of non-interference	DC probe to point Ⓐ. Common to chassis.	A1	Adjust for maximum deflection. With core in "Backed Out" position, first peak observed is correct peak.
2.	"	"	"	"	"	DC probe to point Ⓑ Common to chassis.	A2	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
3.	"	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	"	"	"	DC probe to point Ⓒ. Common to chassis.	A3, A4, A5	Adjust for maximum deflection. With core in "Backed Out" position, first peak observed is correct peak.
4.	"	High side to FM RF stator lug on tuning gang. Low side to chassis.	"	"	"	"	A6, A7	Adjust for maximum deflection. With core in "Backed Out" position, first peak observed is correct peak. Proceed with step 5.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
1.	10000 MMF	High side to pin 1 (grid) of 6AU6 (V5). Low side to chassis.	10.7MC (450KC Swp)	FM	Point of non-interference	Vert. Amp. to point Ⓑ. Low side to chassis.	A1, A2	Adjust A2 so that 10.7MC occurs at center of crossover lines similar to Fig. 1. Adjust A1 for maximum amplitude and straightness of crossover lines.
2.	"	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	"	"	"	Vert. Amp. to point Ⓒ. Low side to chassis.	A3, A4, A5	Disconnect C23. Adjust for curve of maximum amplitude and symmetry similar to Fig. 2.
3.	"	High side to FM RF stator lug on tuning gang. Low side to chassis.	"	"	"	"	A6, A7	Adjust for curve of maximum amplitude and symmetry similar to Fig. 2. Reconnect C23. Proceed with step 5.

AM ALIGNMENT

A17 (osc. coil) should be adjusted for maximum deflection with core near bottom end of coil form.
A18 (AM RF coil) should be adjusted for maximum deflection with core near top end of coil form.
Tuner dial settings shown in Fig. 3.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	10000 MMF	High side to pin 1 (grid) of 6BA6 (V3). Low side to chassis.	455KC (400∿Mod)	AM	Low freq. end of dial	Across voice coil	A10, A11	Adjust for maximum output.
6.	"	High side to center tap of secondary winding of AM RF coil (L7). Low side to chassis.	"	"	"	"	A12, A13	"
7.	Direct	High side to AM antenna terminal. Low side to chassis.	1620KC	"	Tuning gang fully open	"	A14	"
8.	"	"	1400KC	"	Tune to 1400KC signal	"	A15, A16	"
9.	"	"	600KC	"	Tune to 600KC signal	"	A17	Connect 10K resistor from AM RF stator lug on tuning gang to chassis. Rock tuning gang while adjusting A17 for maximum output.
10.	"	"	"	"	"	"	A18	Remove shunt and adjust A18 for maximum output. Repeat steps 7, 8, 9 and 10.

With chassis in cabinet and AM antenna installed, A16 (AM Ant. Trim) should be adjusted for maximum volume.

FM RF ALIGNMENT

Tuner dial setting shown in Fig. 3.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
11.	Two 120Ω Carbon Resistors	Across FM antenna terminals with 120Ω in each lead.	90MC	FM	90MC	DC probe to point Ⓒ. Common to chassis.	L5	Remove shield and adjust for maximum deflection by compressing or expanding coil turns.
12.	"	"	106MC	"	106MC	"	A8, A9	Replace shield and adjust for maximum deflection.
13.	"	"	90MC	"	90MC	"	L3, L1	Adjust for maximum deflection by compressing or expanding coil turns. Repeat steps 11, 12 and 13 until no further improvement is obtained.

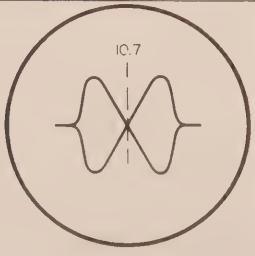


FIG. 1

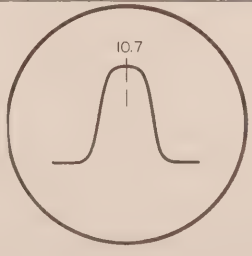


FIG. 2

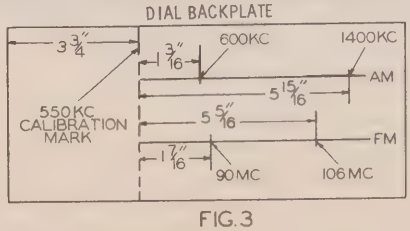
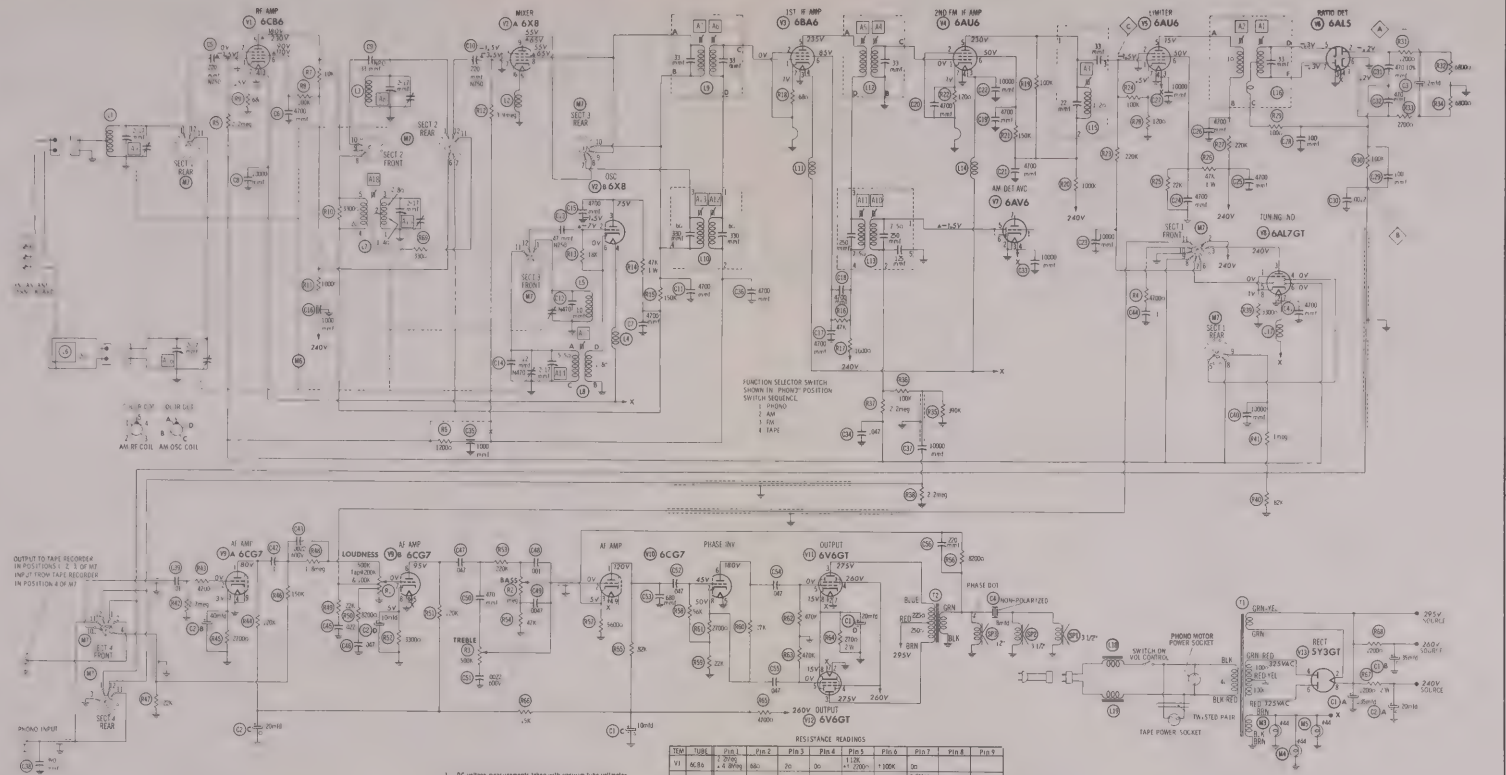


FIG. 3



1 DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt
2 Socket connections are shown as bottom views
3 Measured values are from socket pin to common negative
4 Line voltage maintained at 117 volts for voltage readings
5 Nominal tolerance on component values makes possible a variation of ±10% in voltage and resistance readings
6 Volume control at maximum, no signal applied for voltage measurements

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM.

● SEE PARTS LIST FOR ALTERNATE VALUE ON APPLICATION

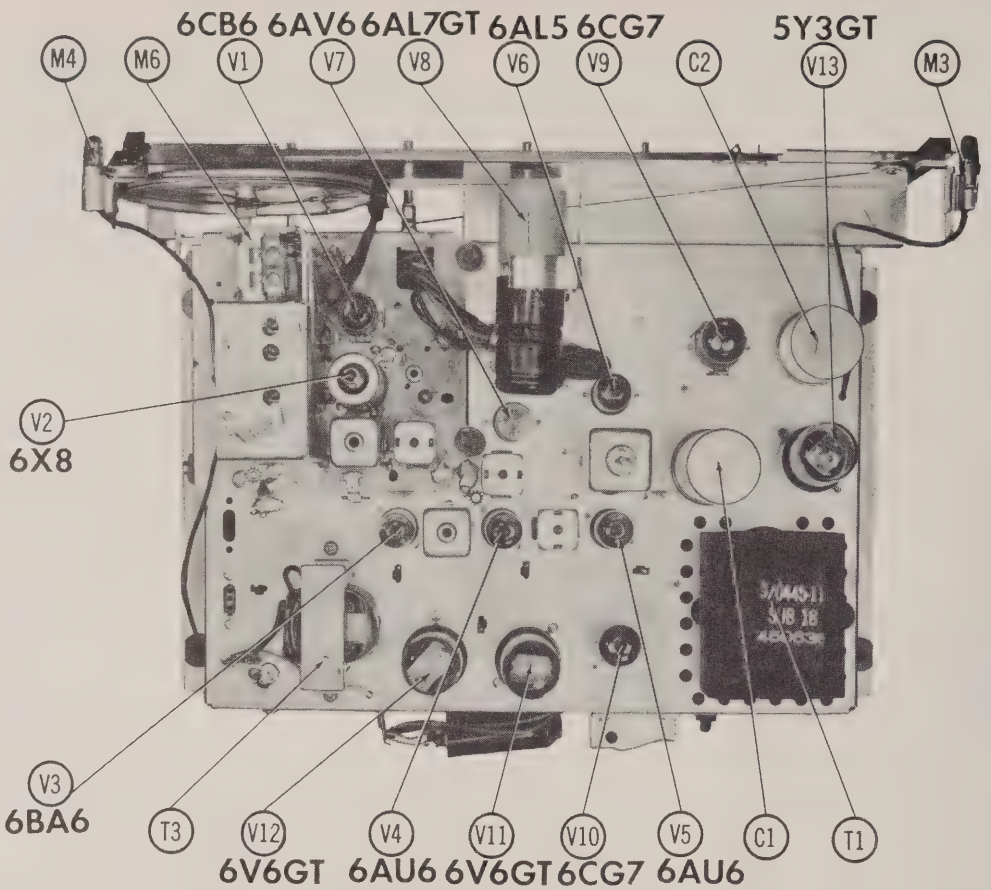
RESISTANCE READINGS

TEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6CB6	270Ω 1.4 MVeg	68Ω	2Ω	0Ω	112K +1.200Ω+	+100K	0Ω 3 Meg 6.5Meg	150K	+150K
V2	6X8	0Ω 1200Ω+ 4.2 MVeg	18K	+56K	2Ω	2Ω	1.8Ω			
V3	6BA6	0Ω	0Ω	2Ω	1.2Ω0Ω	49K	68Ω			
V4	6AU6	9Ω	0Ω	2Ω	0Ω	1.2Ω0Ω	+56K	120Ω		
V5	6AU6	100K	0Ω	2Ω	0Ω	+220Ω	+68K	120Ω		
V6	6AL5	9000Ω	8000Ω	2Ω	2Ω	.8DK	0Ω	180K		
V7	6AV6	NC	0Ω	0Ω	2Ω +2.7Meg	4MK .8DK	NC +2.7Meg	NC		
V8	6AL7GT	3300Ω	0Ω	+1200Ω	+2.7Meg .8DK	+2.7Meg 0Ω	+2.7Meg 2Ω	2Ω	3300Ω	
V9	6CG7	+140K	2.7Meg	270Ω	0Ω	2Ω	+140K	0Ω	3300Ω	0Ω
V10	6CG7	1.8DK	47K	5600Ω	2Ω	0Ω	+35K	39K	25K	NC
V11	6V6GT	TP	2Ω	+225Ω	1.2Ω0Ω	420K	TP	0Ω	270Ω	
V12	6V6GT	TP	0Ω	+250Ω	+.2Ω0Ω	470K	NC	2Ω	270Ω	
V13	5Y3GT	NC	20K (Watts)	NC	100Ω	NC	100Ω	NC	20K (Watts)	

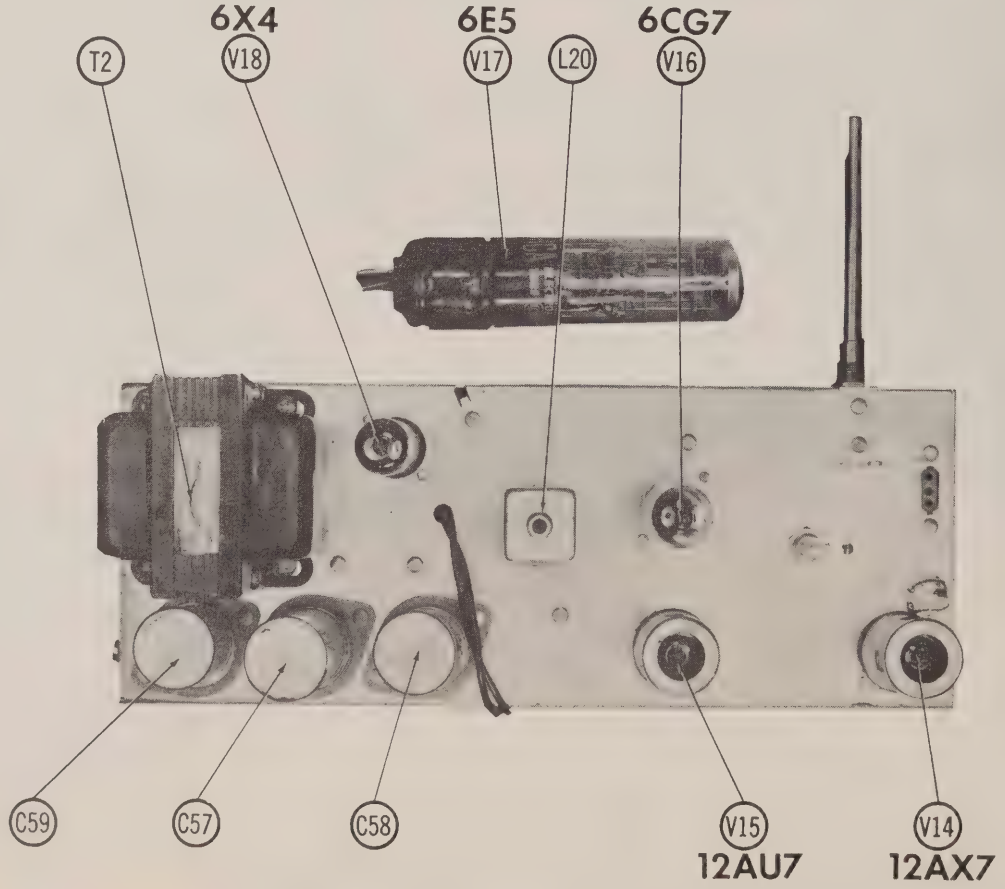
ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED
A MEASURED IN "AM" POSITION
T MEASURED FROM PIN 8 OF V13
NC NO CONNECTION
TP TIE POINT

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

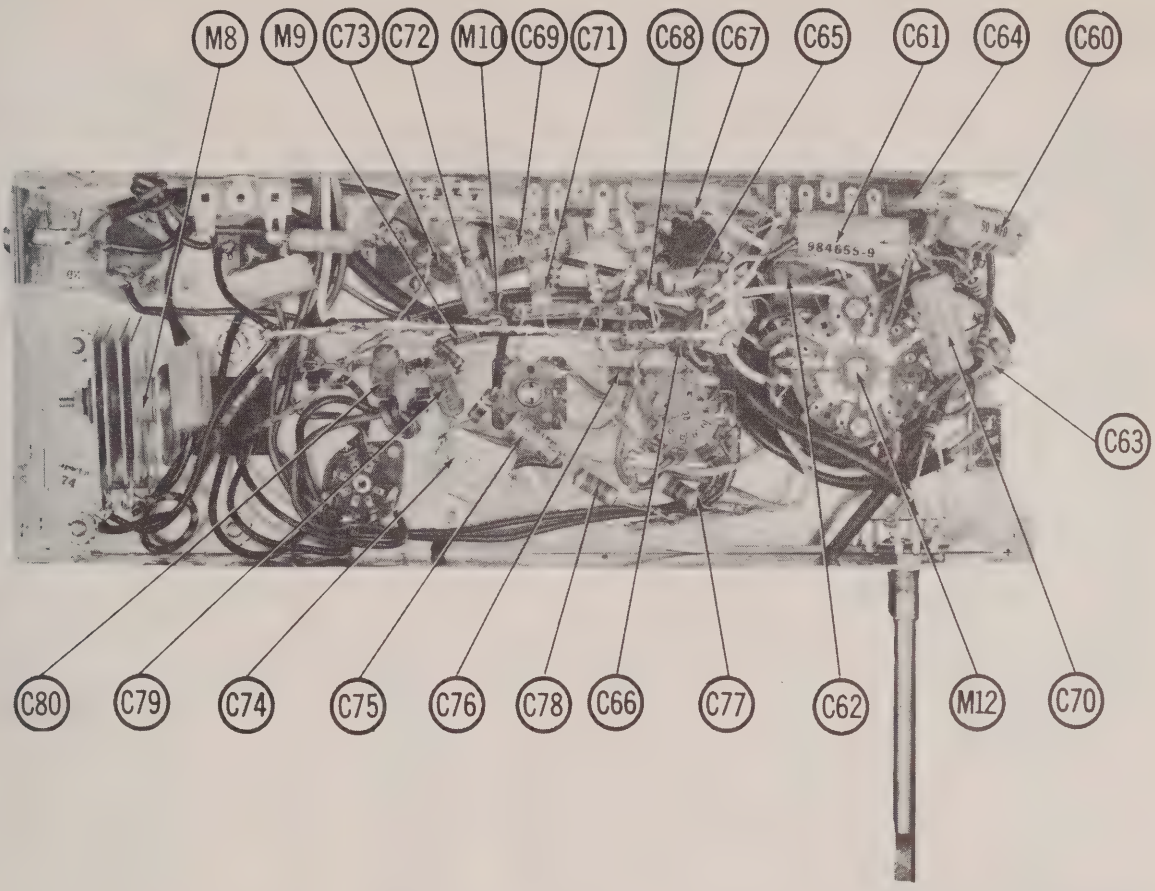
365-11



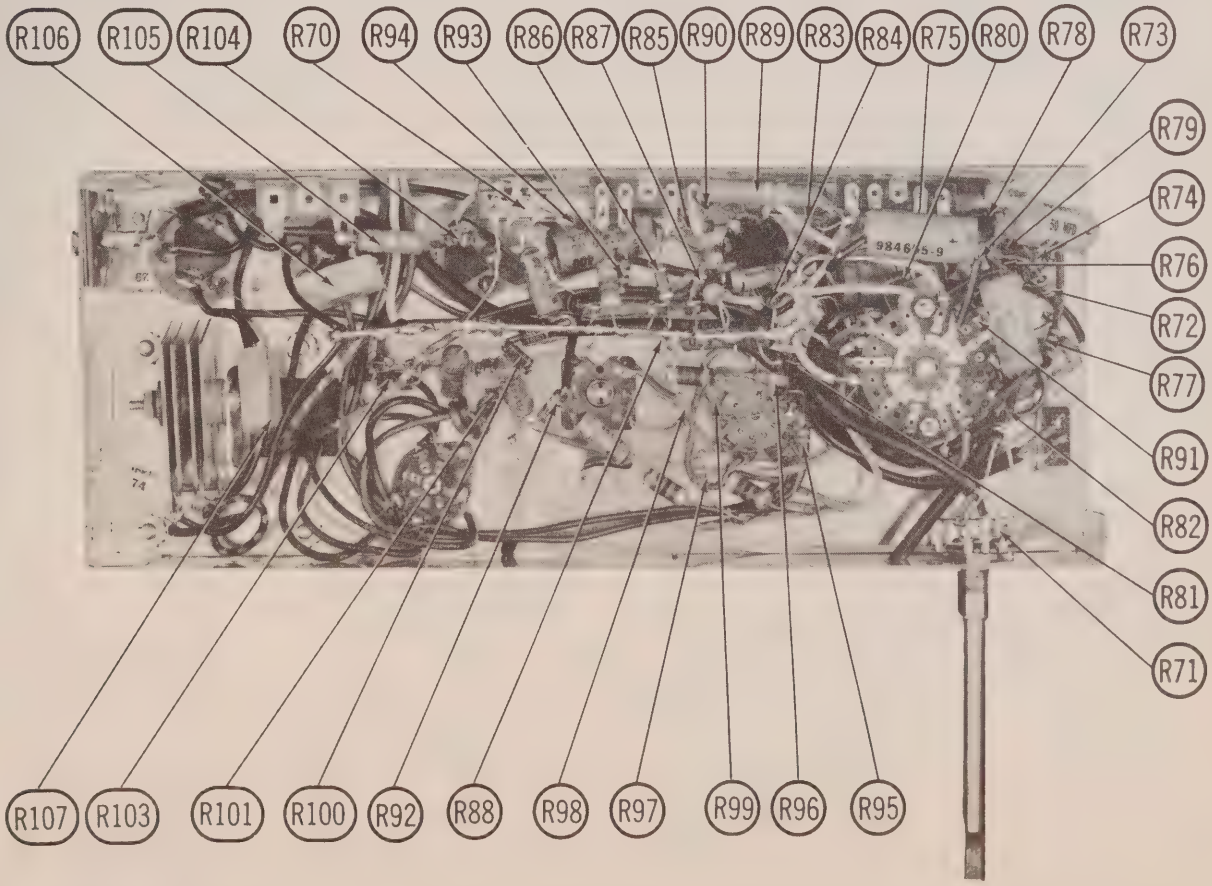
CHASSIS TOP VIEW - TUBE IDENTIFICATION



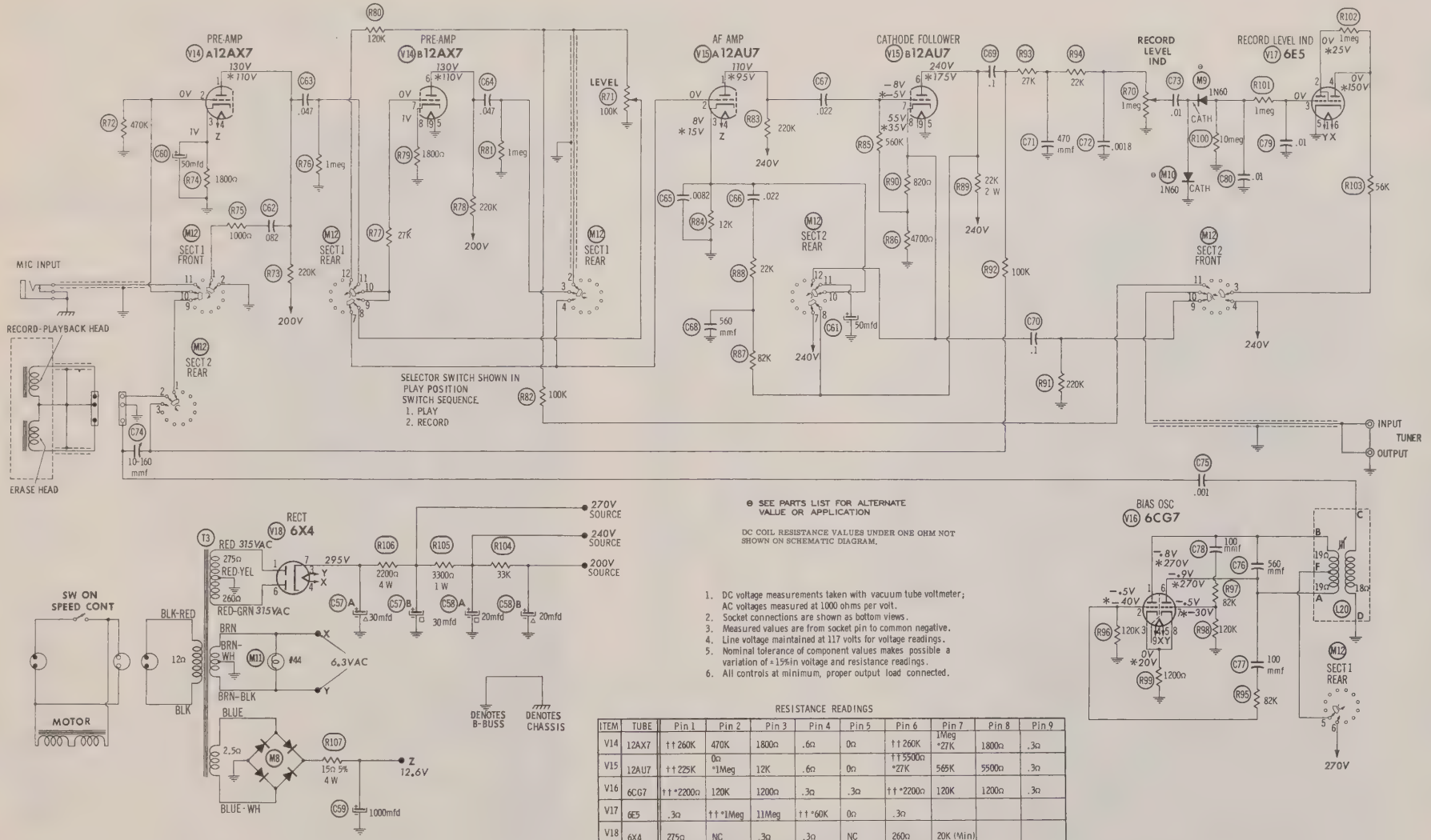
RECORDER CHASSIS - TOP VIEW



RECORDER CHASSIS BOTTOM VIEW - CAPACITOR IDENTIFICATION



RECORDER CHASSIS BOTTOM VIEW - RESISTOR IDENTIFICATION



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V14	12AX7	††260K	470K	1800Ω	.6Ω	0Ω	††260K	1Meg *27K	1800Ω	.3Ω
V15	12AU7	††225K	0Ω *1Meg	12K	.6Ω	0Ω	††5500Ω *27K	565K	5500Ω	.3Ω
V16	6CG7	††*2200Ω	120K	1200Ω	.3Ω	.3Ω	††*2200Ω	120K	1200Ω	.3Ω
V17	6E5	.3Ω	††*1Meg	11Meg	††*60K	0Ω	.3Ω			
V18	6X4	275Ω	NC	.3Ω	.3Ω	NC	260Ω	20K (Min)		

ALL MEASUREMENTS TAKEN IN "PLAY" POSITION UNLESS TOTHERWISE DESIGNATED.
* MEASURED IN "RECORD" POSITION.
†† MEASURED FROM PIN 7 OF V18.
NC NO CONNECTION.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	6CB6	
V2	Mixer-Oscillator	6X8	
V3	1st. IF Amplifier	6BA6	
V4	2nd. FM IF Amplifier	6AU6	
V5	Limiter	6AU6	
V6	Ratio Detector	6AL5	
V7	AM Det.-AVC	6AV6	
V8	Tuning Indicator	6AL7GT	
V9	AF Amplifier	6CG7	
V10	AF Amp.-Phase Inv.	6CG7	
V11	Output	6V6GT	
V12	Output	6V6GT	
V13	Rectifier	5Y3GT	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▬35	400	101414	AFH4-78-10	DO592	FP397	TMQ-90	Q-385	TVL-4736
B	■35	400			BBR10-25	TC26	TD-10-450		
C	▲10	350							
D	20	25							
C2A	▬20	400	101357	AFH4-76	DO890	FP396.1	TMQ-73	Q-305	TVL-4731
B	▲40	25			BBR10-25	TC22	TD-10-25	FM-0210	
C	■20	400							
D	10	25							
C3	2	50	79181	PRS50V2	BBR2-50	TC302	TD-2-50	FM-0502	TVA-1301
C4	8	10NP	100509	PRS10VAC8	BBR1615 †	TC108		MT-1516 †	R2201 *
					BBR1615 †			MT-1516 †	

* Non-catalog item.
† Connect negative leads together.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	220		71920	N750-SI 220	TCN-220	C10T22U	TC7-220		5TCU-T22	N750
C6	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C7	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C8	10000		73960	BPD-01	DD-103	BYA6S1	ED-.01	DC511	5HK-S1	
C9	33		76739	NP0-SI 33	TCZ-33	C10C33C	TCO-33	ZT-5433	5TCC-C33	NP0
C10	220		71920	N750-SI 220	TCN-220	C10T22U	TC7-220		5TCU-T22	N750
C11	4700		39668	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C12	10		76350							
C13	47		39042	N750-SI 47	TCN-47	C10Q47J	TC7-47	NT-5447	5TCU-Q47	N750
C14	12		76349							N470
C15	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C16	1000		77084	EF-001	MFT-1000				503C-D1	
C17	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C18	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C19	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C20	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C21	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C22	10000		73960	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C23	10000		73960	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C24	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C25	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C26	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C27	10000		73960	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C28	100		103166	SI 100	D6-100	LT6T1	GP-100	UC-531	5GA-T1	
C29	100		103166	SI 100	D6-100	LT6T1	GP-100	UC-531	5GA-T1	
C30	.0012	200	103332	BPD-0012	D6-122		GP-1200			
C31	470		76992	1464-00047		5R5T47			MS-347	10%
C32	470		76992	1464-00047		5R5T47			MS-347	10%
C33	10000		73960	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C34	.047	200	73558	BPD-05	DF-503	CUB2S47		GEM-2147	2TM-S47	
C35	1000		77084	EF-001	MFT-1000				503C-D1	
C36	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	
C37	10000		73960	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C38	390		103333	SI 390	D6-391	LT6T39	GP-390	UC-5339	5GA-T39	
C39	.01	400	73561	BPD-01	DD-103	CUB4S1	GP-10000	GEM-411	4TM-S1	
C40	10000		73960	BPD-01	DD-103	BYA6S1	ED-01	DC511	5HK-S1	
C41	4700		73473	BPD-0047	DD-472	BYA10D47	ED-0047	UC-5247	5HK-D47	

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (cont)

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA RCA Victor PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R28	120Ω		502112	BTS-120	
R29	100Ω		502110	BTS-100	
R30	100K		502410	BTS-100K	
R31	1200Ω		502212	BTS-1200	
R32	6800Ω		502268	BTS-6800	
R33	2200Ω		502222	BTS-2200	
R34	6800Ω		502268	BTS-6800	
R35	390K		502439	BTS-390K	
R36	100K		502410	BTS-100K	
R37	2.2Meg		502522	BTS-2.2Meg	
R38	2.2Meg		502522	BTS-2.2Meg	
R39	3300Ω		502233	BTS-3300	
R40	82K		502382	BTS-82K	
R41	1Meg		502510	BTS-1Meg	
R42	2.7Meg		72788	BTS-2.7Meg	
R43	4700Ω		502247	BTS-4700	
R44	120K		502412	BTS-120K	
R45	2700Ω		502227	BTS-2700	
R46	150K		502415	BTS-150K	
R47	22K		502322	BTS-22K	
R48	1.8Meg		502518	BTS-1.8Meg	
R49	22K		502322	BTS-22K	
R50	8200Ω		502282	BTS-8200	
R51	120K		502412	BTS-120K	
R52	3300Ω		502233	BTS-3300	
R53	220K		502422	BTS-220K	
R54	47K		502347	BTS-47K	
R55	82K		502382	BTS-82K	
R56	8200Ω		502282	BTS-8200	
R57	5600Ω		502256	BTS-5600	
R58	56K		502356	BTS-56K	
R59	22K		502322	BTS-22K	
R60	27K		502327	BTS-27K	
R61	2700Ω		502227	BTS-2700	
R62	470K		502447	BTS-470K	
R63	470K		502447	BTS-470K	
R64	270Ω	2	522127	BTB-270	
R65	4700Ω		502247	BTS-4700	
R66	15K		502315	BTS-15K	
R67	1200Ω	2	522212	BTB-1200	
R68	2200Ω		502222	BTS-2200	
R69	330Ω		502133	BTS-330	

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC @ .92A	720VCT .110A	5V @ 2A	6.3V @ 5.2A	103335					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	8400Ω CT	6-8Ω	103336	Z1404 ①	A-2901 ①	A-3831 ①	22S56	S-55X	① Drill one new mounting hole.

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA RCA Victor PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP1	3½"	PM	6-8Ω	100465	3A15TZ6.6	
SP2	3½"	PM	6-8Ω	100465	3A15TZ6.6	
SP3	12"	PM	6-8Ω	100897	12A10X	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	FM Ant. Coil	103501				
L2	Fil. Choke	76351	19-1005	BC-566	4612	9 Microhenries
L3	FM RF Coil	76353				
L4	Fil. Choke	76351	19-1005	BC-566	4612	9 Microhenries
L5	FM Osc. Coil	77973				
L6	Loop Ant.	100534				
L7	AM RF Coil	76338	14-1076			
L8	AM Osc. Coil	76337	14-1077		71-OSC	
L9	1st. FM IF	75559	16-3471	FM-251	1451	
L10	1st. AM IF	76335	16-6758	BC-352	12-C1	
L11	Fil. Choke	71942	19-1000	BC-561	4602	1.07 Microhenries
L12	2nd. FM IF	76329	16-3472	FM-251	1451	
L13	2nd. AM IF	76328	16-6758	BC-353	12-C2	
L14	Fil. Choke	71942	19-1000	BC-561	4602	1.07 Microhenries
L15	3rd. FM IF	77939				
L16	Ratio Det.	77938	17-3488	FM-252	1453	
L17	Fil. Choke	71942	19-1000	BC-561	4602	1.07 Microhenries
L18	Line Choke	103599				25 Microhenries
L19	Line Choke	103599				25 Microhenries

RECORDER ADJUSTMENTS

RECORDING BIAS ADJUSTMENT (C74)

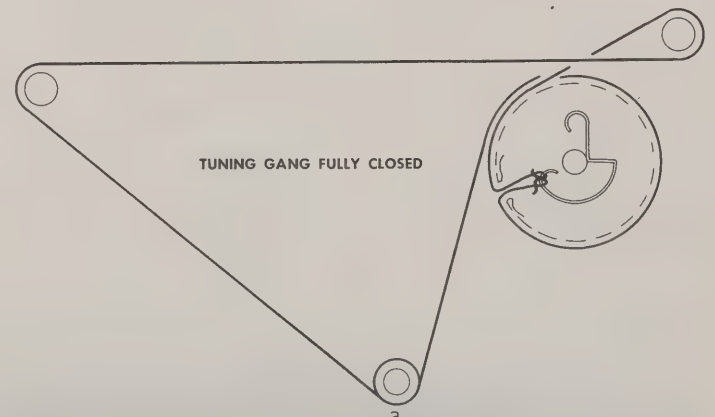
To adjust recording bias proceed as follows:

1. Connect a calibrated scope from the junction of C74 and R92 to chassis.
2. Press "Record" pushbutton. Allow several minutes for equipment to warm-up.
3. Turn "Level Control" (R71) to MINIMUM.
4. Adjust oscillator trimmer (C74) for 195V (peak to peak) on the scope.
5. Turn off power and disconnect equipment.

RECORDING LEVEL INDICATOR ADJUSTMENT (R70)

To adjust recording level indicator proceed as follows:

1. Remove bias oscillator tube (V16).
2. Connect an RF VTVM or calibrated scope from pin 6 of V15 to chassis.
3. Connect a 1000$\sim$ signal (approx. 1V RMS) to either tuner input or output jack.
4. Press "Record pushbutton. Allow several minutes for equipment to warm-up.
5. Adjust "Level Control" (R71) for 5.9V RMS on the RF VTVM or 16.5V (peak-to-peak) on the scope.
6. Adjust "Record Level" (R70) so that the tuning indicator (V17) just closes.
7. Turn off power, disconnect equipment and replace tube (V16).



DIAL CORD STRINGING

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V14	Preamplifier	12AX7	
V15	AF Amp. -Cath. Follower	12AU7	
V16	Bias Oscillator	6CG7	
V17	Record Level Ind.	6E5	
V18	Rectifier	6X4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C57A	▲30	450	103350	AFH2-51	BBRD3345	FP259	TDLD-29	S-265	TVA-2735
B	■30	450				TC75		FM-4530	
C58A	■20	450	34889	AFH2-51	BO400	FP234	TMD-50	D-215	TVL-2755
B	▲20	450							
C59	1000	15	103257	AFH1-02	A0060	WP039	TMS-4	S-020	TVL-1165
C60	50	6	78573	SRE6V50	BBR50-6	TC29	TD-50-6	MMT-650	TVA-1100
C61	50	6	78573	SRE6V50	BBR50-6	TC29	TD-50-6	MMT-650	TVA-1100

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C62	.082	400	103191							
C63	.047	400	78921-A	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C64	.047	400	78921-A	BPD-05	DF-503	CUB4S47		GEM-4147	4TM-S47	
C65	.0082	200	102517	P288N-008		CUB2D8			2TM-D8	
C66	.022	400	103351	BPD-02	DF-203	CUB4S22	ED-02	GEM-4122	4TM-S22	
C67	.022	400	103351	BPD-02	DF-203	CUB4S22	ED-02	GEM-4122	4TM-S22	
C68	560		76685	SI 560	D6-561	LT6T56	GP-560	UC-5356	UC-5356	
C69	.1	400	78922	P488N-1	DF-104	CUB4P1		GEM-401	4TM-P1	
C70	.1	200	79251	P488N-1	DF-104	CUB2P1		GEM-201	2TM-P1	
C71	470		75198	SI 470	D6-471	LT6T47	GP-470	UC-5347	5GA-T47	
C72	.0018	200	100241		D6-182	CUB2D2	GP-2000	GEM-2218	2TM-D18	
C73	.01	200	101000	BPD-01	DD-103	CUB2S1	GP-10000	GEM-211	2TM-S1	
C74	10-160		102412							
C75	.001	400	102426	BPD-001	DD-102	CUB4D1	GP-1000	GEM-421	4TM-D1	
C76	560		76685	SI 560	D6-561	LT6T56	GP-560	UC-5356	5GA-T56	
C77	100		75437	SI 100	D6-101	LT6T1	GP-100	UC-531	5GA-T1	
C78	100		75437	SI 100	D6-101	LT6T1	GP-100	UC-531	5GA-T1	
C79	.01	200	101000	BPD-01	DD-103	CUB2S1	GP-10000	GEM-211	2TM-S1	
C80	.01	200	101000	BPD-01	DD-103	CUB2S1	GP-10000	GEM-211	2TM-S1	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R70A	1Meg	½	103260	AB-69	A47-1Meg-S	B11-137	TA16L	Record Level
B	Shaft			AK-1	FKS-1/4	TM1-Kit	Not Req.	
R71A	100K	½	103354	AB-41	A47-100K-Z	Q13-128	U39	Level (Volume)
B	Shaft			AK-4 ①	FS-5	C3 ②	DS-36 ③	

① Saw off shaft to correct length . File 9/16" flat to fit knob to shaft.
② Use part of original control shaft as needed.
③ Special shaft extension.

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA RCA Victor PART No.	REPLACEMENT DATA IRC PART No.	NOTES
R72	470K		502447	BTS-470K	
R73	220K		502422	BTS-220K	
R74	1800Ω		502218	BTS-1800	
R75	1000Ω		502210	BTS-1000	
R76	1Meg		502510	BTS-1Meg	
R77	27K		502327	BTS-27K	
R78	220K		502422	BTS-220K	
R79	1800Ω		502218	BTS-1800	
R80	120K		502412	BTS-120K	
R81	1Meg		502510	BTS-1Meg	
R82	100K		502410	BTS-100K	
R83	220K		502422	BTS-220K	
R84	12K		502312	BTS-12K	
R85	560 K		502456	BTS-560K	
R86	4700Ω		502247	BTS-4700	
R87	82K		502382	BTS-82K	
R88	22K		502322	BTS-22K	
R89	22K	2	522322	BTB-22K	
R90	820Ω		502182	BTS-820	
R91	220K		502422	BTS-220K	
R92	100K		502410	BTS-100K	
R93	27K		502327	BTS-27K	
R94	22K		502322	BTS-22K	
R95	82K		502382	BTS-82K	
R96	120K		502412	BTS-120K	
R97	82K		502382	BTS-82K	
R98	120K		502412	BTS-120K	
R99	1200Ω		502212	BTS-1200	
R100	10Meg		502610	BTS-10Meg	
R101	1Meg		502510	BTS-1Meg	
R102	1Meg		502510	BTS-1Meg	
R103	56K		502356	BTS-56K	
R104	33K		502333	BTS-33K	
R105	3300Ω	1	512233	BTA-3300	
R106	2200Ω	4	103352		
R107	15Ω 5%	4	103285		

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T3	117VAC @.28A	560VCT @.028A	18V @.300A	6.3VCT @1.64A	103355					

COILS (RF-IF)

ITEM No.	USE	RCA Victor PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L20	Bias Osc.	103356				

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT (Measured)	RCA Victor PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.	NOTES
M8	.300A	103258	1017A	C1B	B26G	604B	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	RCA Victor PART No.	CBS PART No.	SYLVANIA PART No.	NOTES
M9	1N60	101615	1N60	1N60	Recording level rect. (Pigtail) Note 1.
M10	1N60	101615	1N60	1N60	Recording level rect. (Pigtail) Note 1.

Note 1. Some versions may use type 1N295.

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M11	Indicator Light	11891	#44
M12	Switch	103353	Record-Play
	Knob	103435	Speed-volume

PHOTOFACT* Folder

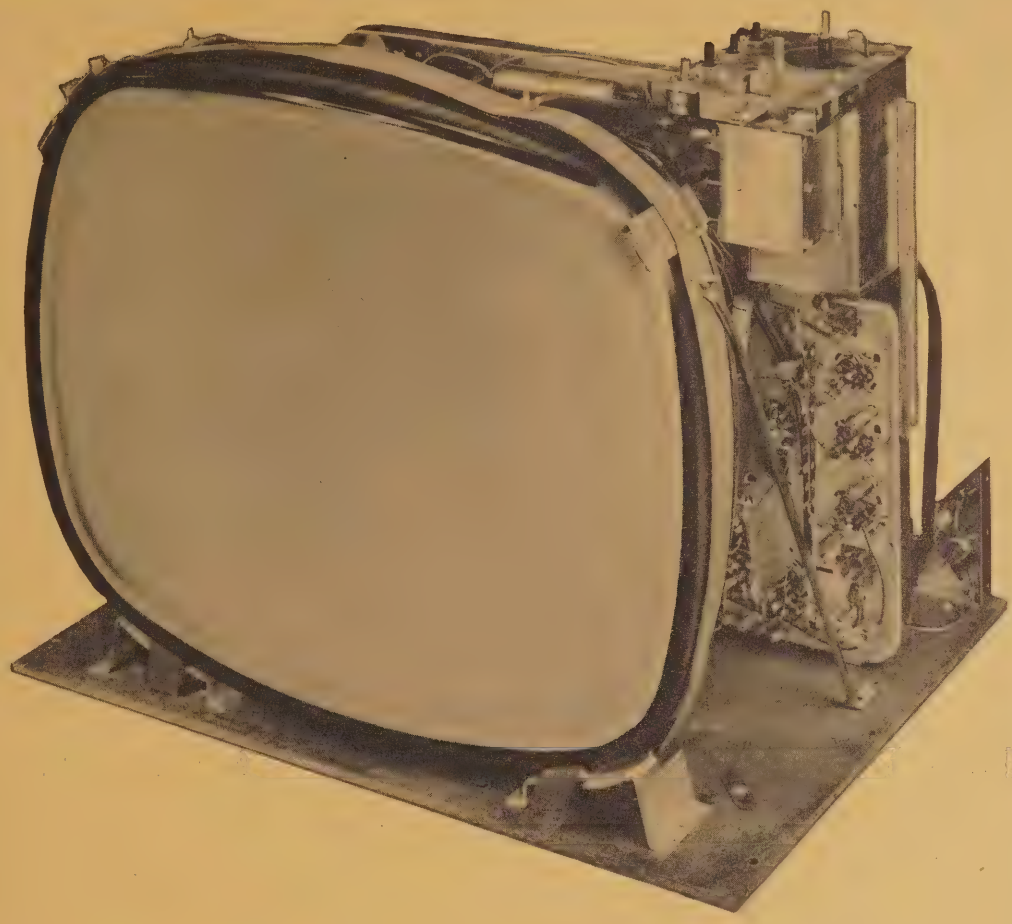
*TRADE MARK

SENTINEL Ch. U73-01AA, U73-02AA V73-01AA, V73-02AA

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



SENTINEL Ch. U73-01AA, U73-02AA
V73-01AA, V73-02AA

TRADE NAME	Sentinel Chassis U73-01AA, U73-02AA , V73-01AA, V73-02AA
MANUFACTURER	Sentinel Radio Co., Fort Wayne 4, Indiana
TYPE SET	Television Receiver
TUBES	Seventeen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING 145 Watts, 1.2 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

INDEX

Alignment Instructions 6
Horizontal Sweep Circuit Adjustments 11
Parts List and Descriptions 12, 13
Photographs
- Capacitor & Alignment Identification 4, 9
- Chassis-Rear View 11
- Chassis-Top View 7
- RF Tuner 14, 15, 16

Photographs (Con't)
- Resistor & Inductor Identification 5, 8

Resistance Measurements 10
Servicing in the Field 1
Schematic 2
Tube Failure Check Chart 3
Tube Placement Chart (Bottom View) 10
Tube Placement Chart (Top View) 3

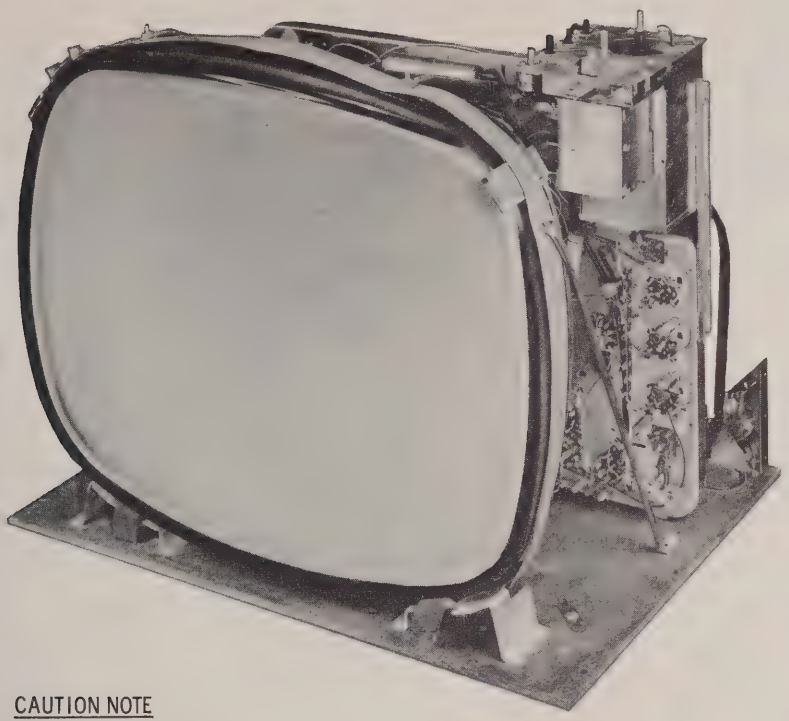
PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 7-57 SET 365 FOLDER 12

SENTINEL Ch. U73-01AA, U73-02AA V73-01AA, V73-02AA



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS
Care should be exercised when connecting test equipment or physically contacting the chassis.

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated. Adjust for best picture and sound.

FOCUS

The focus may be varied by the position of a strap on the base of the picture tube. The strap can be connected between pins 6 and 10 or 6 and 1. Readjust the ion trap for the best focus consistent with maximum brightness.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

The horizontal frequency coil is used as the horizontal hold control. Adjust the horizontal hold until the picture synchronizes horizontally. (For location, see tube placement chart).

FUSES

A 7.5Ω resistor (R87) is used for LV power supply protection. (For location, see tube placement chart).

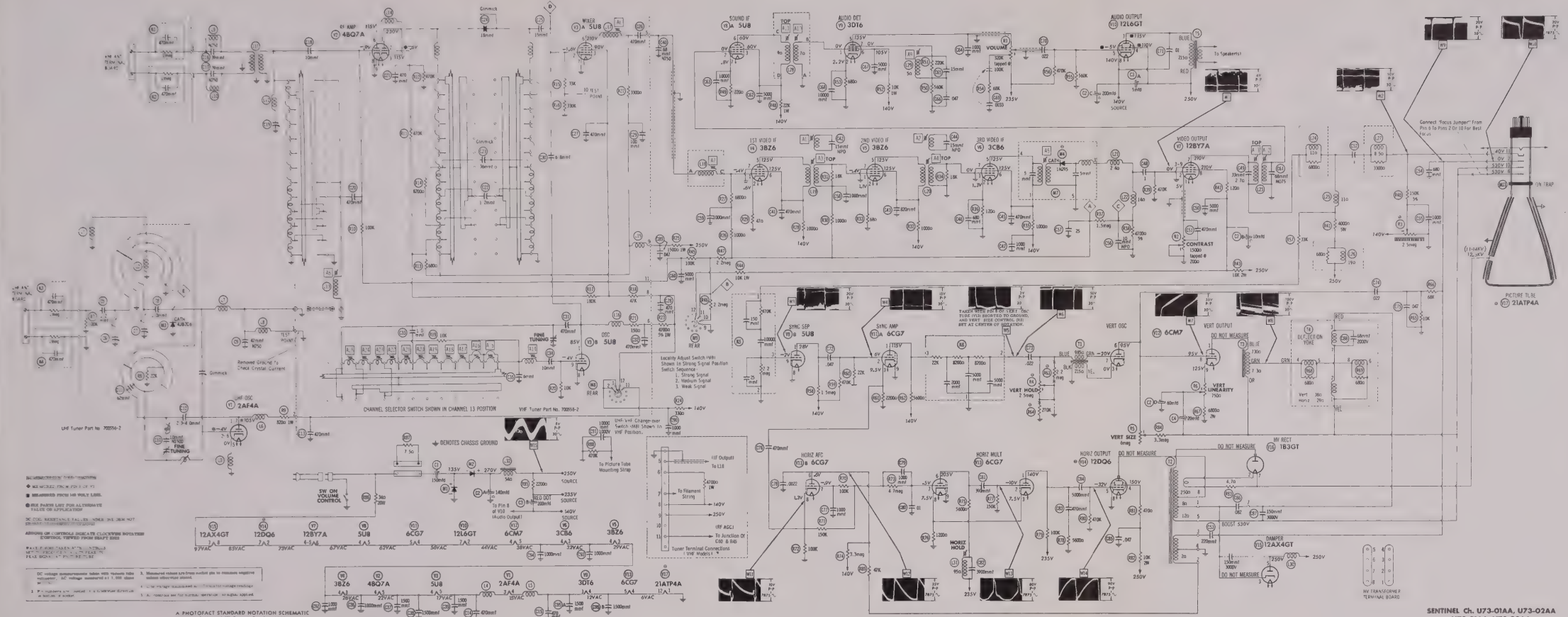
CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

SENTINEL Ch. U73-01AA, U73-02AA
V73-01AA, V73-02AA

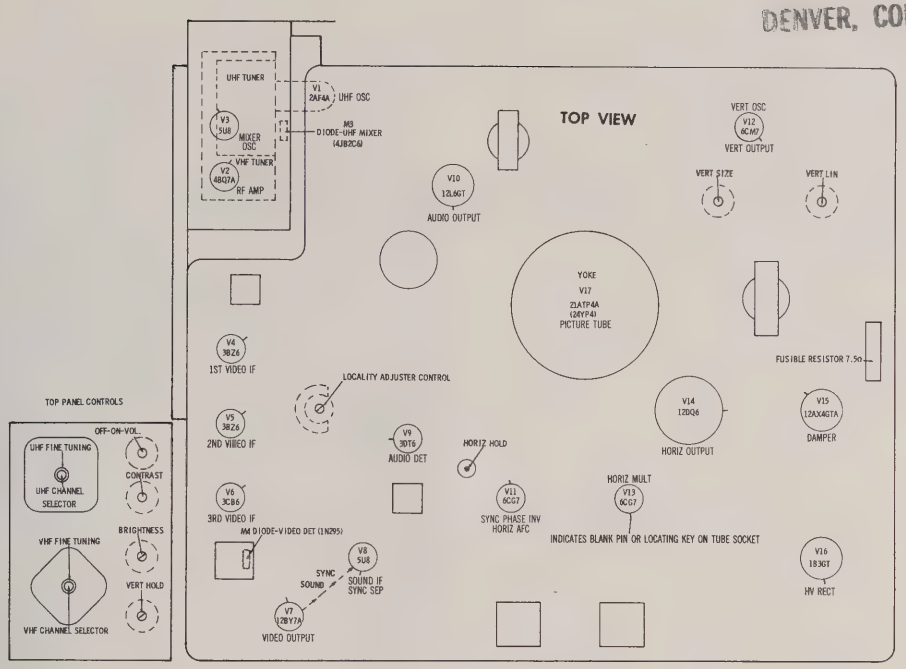
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


RF AMP 48Q7A
MIXER 5U8
SOUND IF 5U8
AUDIO DET 3DT6
AUDIO OUTPUT 12L6GT
1ST VIDEO IF 3BZ6
2ND VIDEO IF 3BZ6
3RD VIDEO IF 3CB6
VIDEO OUTPUT 12BY7A
SYNC SEP 5U8
SYNC AMP 6CG7
VERT OSC
VERT OUTPUT 6CM7
HORIZ AFC 6CG7
HORIZ MULT 6CG7
HORIZ OUTPUT 12DQ6
HV RECT 1B3GT
DAMPER 12AX4GT
OSC 5U8
UHF OSC 2AF4A
PICTURE TUBE 21ATP4A
CONTRAST
VOLUME
VERT HOLD
VERT SIZE
VERT LINEARITY
HORIZ HOLD
BOOST 530V
DO NOT MEASURE
CHANNEL SELECTOR SWITCH SHOWN IN CHANNEL 13 POSITION
VHF Tuner Part No. 700556-2
UHF Tuner Part No. 700556-2
SW ON VOLUME CONTROL
FINE TUNING
AGC
DENOTES CHASSIS GROUND
12AX4GT 12DQ6 12BY7A 5U8 6CG7 12L6GT 6CM7 3CB6 3BZ6
21ATP4A 3BZ6 48Q7A 5U8 2AF4A 3DT6 6CG7
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957
SENTINEL Ch. U73-01AA, U73-02AA
V73-01AA, V73-02AA

TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE S.
DENVER, COLORADO



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

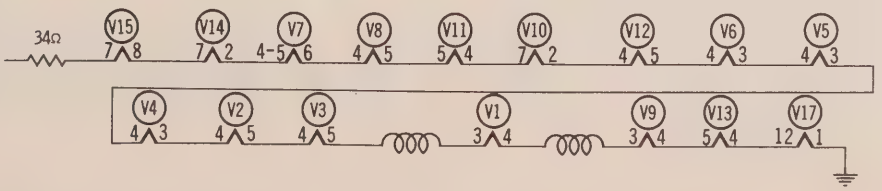
POWER SUPPLY FAILURE
No raster, no sound - **Fusible Resistor (R87), Rectifier (M1, M2)**

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - **V4, V5, V6, Diode (M4), V7, V10**
No pic, no sound, has snow - **V2, V3 (V1 UHF only)**
No pic, has sound, has raster - **V7, V17**
Has pic, no sound - **V8, V9, V10**

SYNC FAILURE
No vert. sync - **V8, V11, V10**
No horiz. sync - **V8, V11, V10**
No vert. or horiz. sync - **V8, V11, V10**

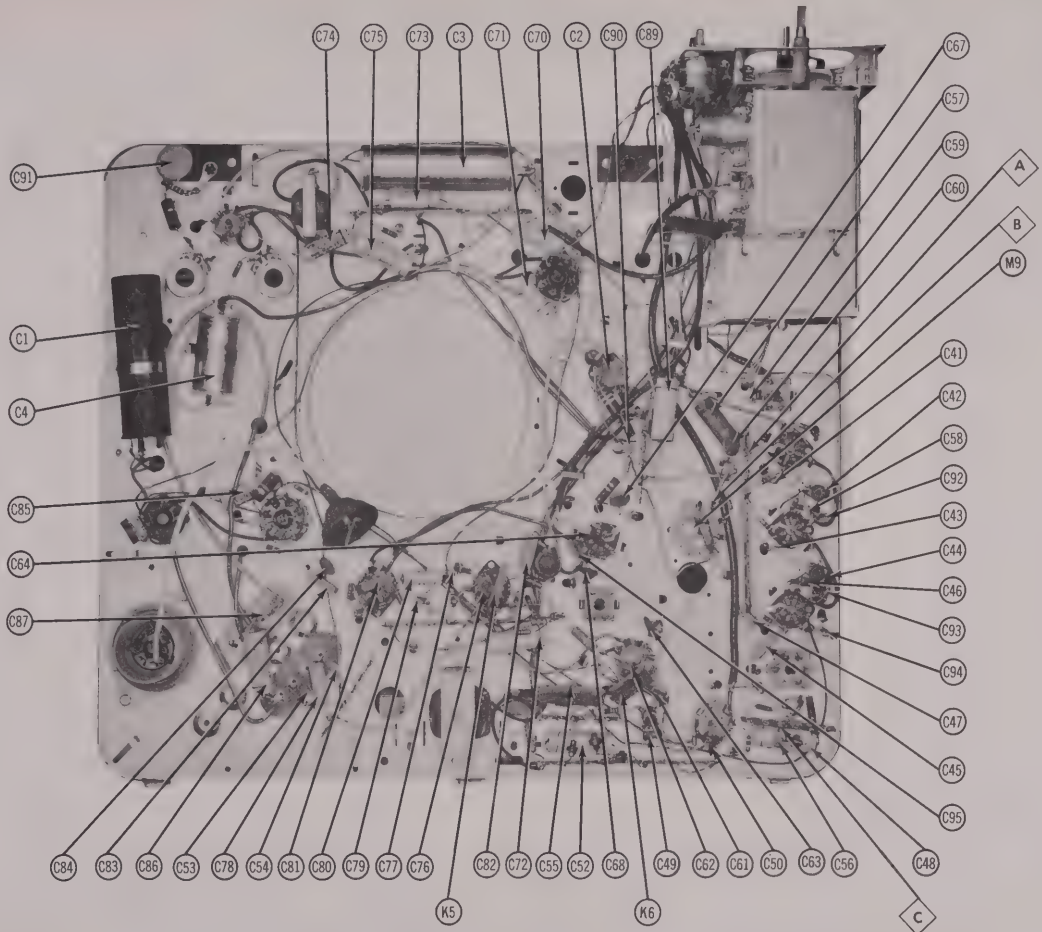
SWEEP FAILURE
No raster, has sound - **V11, V13, V14, V15, V16, V17**
No vertical deflection - **V12**
Poor vert. linearity or foldover - **V12**
Poor horiz. linearity or foldover - **V13, V14, V15**
Narrow picture - **V13, V14, V15, M1, M2**
Vert. off freq. - **V12**
Horiz. off freq. - **V13**

This receiver employs tubes used in a series filament network, an open filament in any tube in the series will cause the set to be inoperative. (See circuit below).



SET 365 FOLDER 12

SENTINEL Ch. U73-01AA, U73-02AA
V73-01AA, V73-02AA



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
Allow a 20 minute warm-up period for the receiver and test equipment.
The High Voltage lead should be securely taped and kept away from the chassis.

VIDEO IF ALIGNMENT

Set "Locality Adjust" switch to strong position.
Turn contrast control fully counter clockwise.
Connect the negative lead of a 3 volt bias supply to point (A). Positive to chassis.
Connect the negative lead of a 1.5 volt bias supply to point (B). Positive to chassis.
Connect the synchronized sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	50Ω Carbon Resistor	High side to pin 1 (grid) of 3BZ6 (V4). Low side to chassis.	43.0MC (10MC Swp)	47.25MC	Any non-intefering channel	Vert. Amp. thru 15K to point (C). Low side to chassis.	A1	Adjust to place marker in center of trap notch as in Fig. 1.
2.	"	"	"	41.25MC	"	"	A2	"
3.	"	"	"	42.75MC	"	"	A3, A4	Set generator output for 4 volts peak to peak on scope. Adjust for response curve similar to Fig. 2 with markers positioned as shown. Recheck steps 1 and 2.
4.	"	High side to point (D). Low side to chassis.	"	41.25MC 42.75MC 43.0MC 45.0MC 45.75MC 47.25MC	"	"	A6, A7	Adjust for response similar to Fig. 3 with markers as indicated.
5.	1000Ω	High side to point (E). Low side to tuner chassis.	"	"	UHF	"	A8	Adjust for maximum gain and MINIMUM tilt of curve similar to Fig. 3.

SOUND IF ALIGNMENT

Turn the set on and tune in a strong TV signal. Adjust A9 for maximum sound output and MINIMUM distortion.
Reduce the signal strength, by removing the antenna connections or connecting a variable attenuator between the antenna and antenna terminals, so that with volume control set at maximum, the sound signal is barely audible. Adjust A10 for MINIMUM distortion and clearest sound.
With the same weak signal input, adjust A11 and A12 for MINIMUM noise and clearest sound.
Reduce signal further until noise is present in the sound and retouch A10 for MINIMUM noise and clearest sound.

4.5MC TRAP ALIGNMENT

Turn the set on and adjust A13 for MINIMUM 4.5MC beat interference in picture.

VHF OSCILLATOR ALIGNMENT

Connect bias as under "Video IF Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
Set the fine tuning control to the center of its range.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Fig. 4	Across antenna terminals thru balancing network (Fig. 4).	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 47K to point (C). Low side to chassis.	A14	Adjust to place sound marker in trap notch as in Fig. 5. Video marker should fall at 50%. Some sets may not have a slug for channel 12.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A15	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A16	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A17	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A18	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A19	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A20	
			85MC (10MC Swp)	83.25MC 87.75MC	6		A21	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A22	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A23	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A24	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A25	

UHF TUNER AND VHF RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

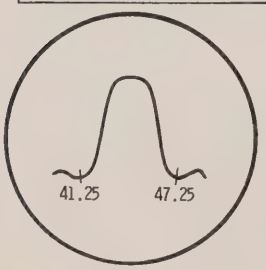


FIG. 1

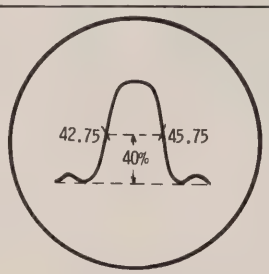


FIG. 2

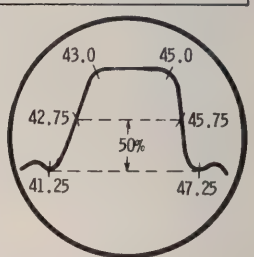


FIG. 3

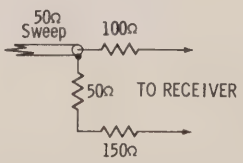


FIG. 4

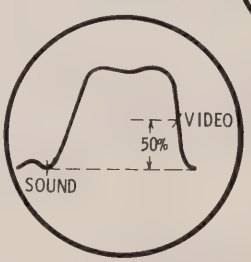
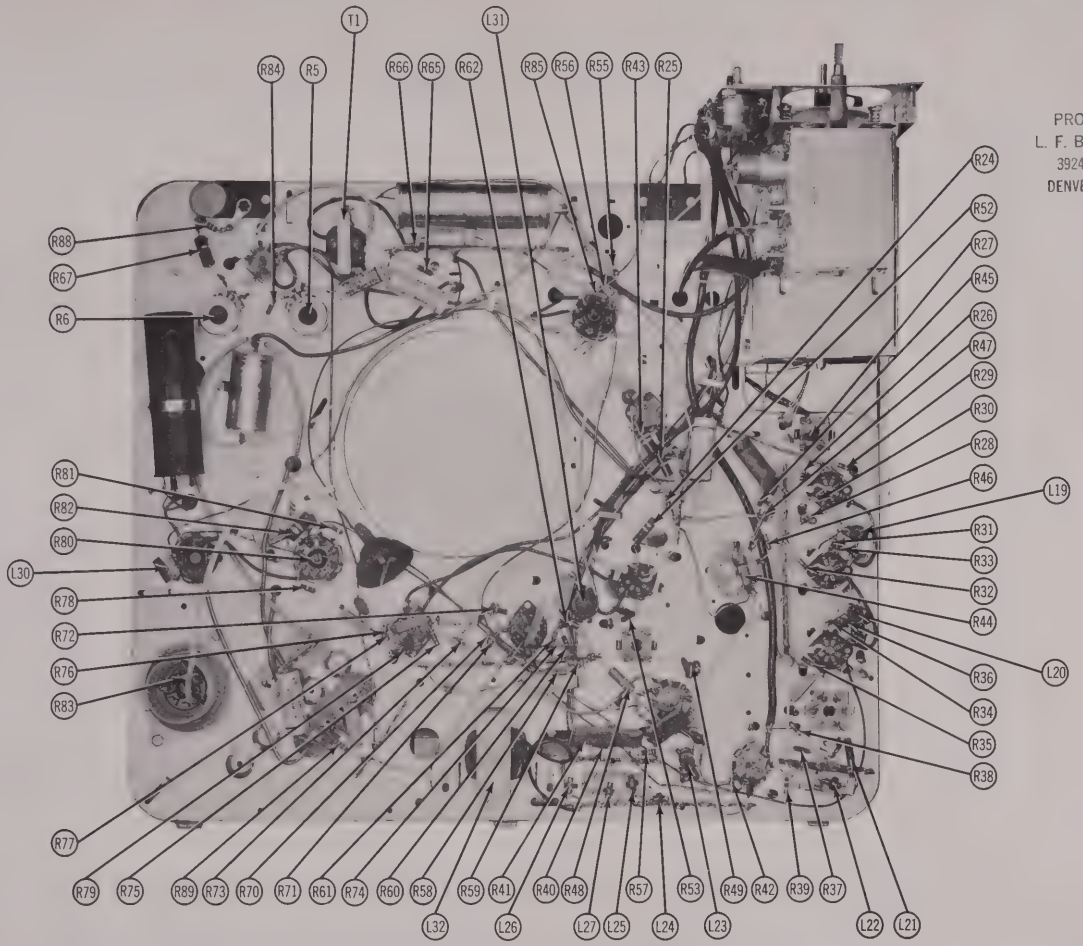


FIG. 5

CHASSIS TOP VIEW

SENTINEL Ch. U73-01AA, U73-02AA,
V73-01AA, V73-02AA



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

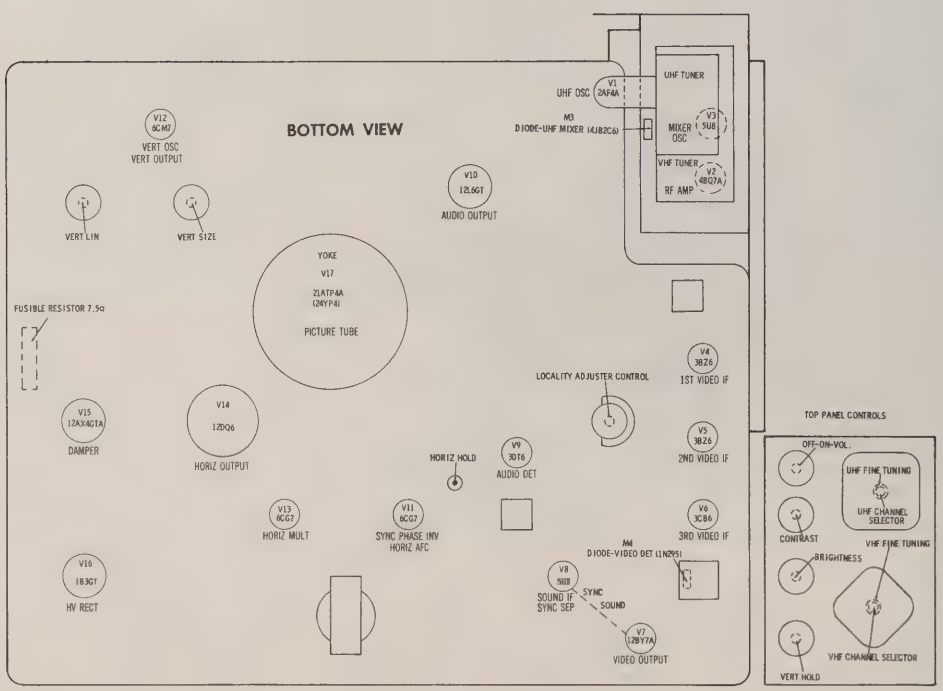
CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

SENTINEL Ch. U73-01AA, U73-02AA,
V73-01AA, V73-02AA

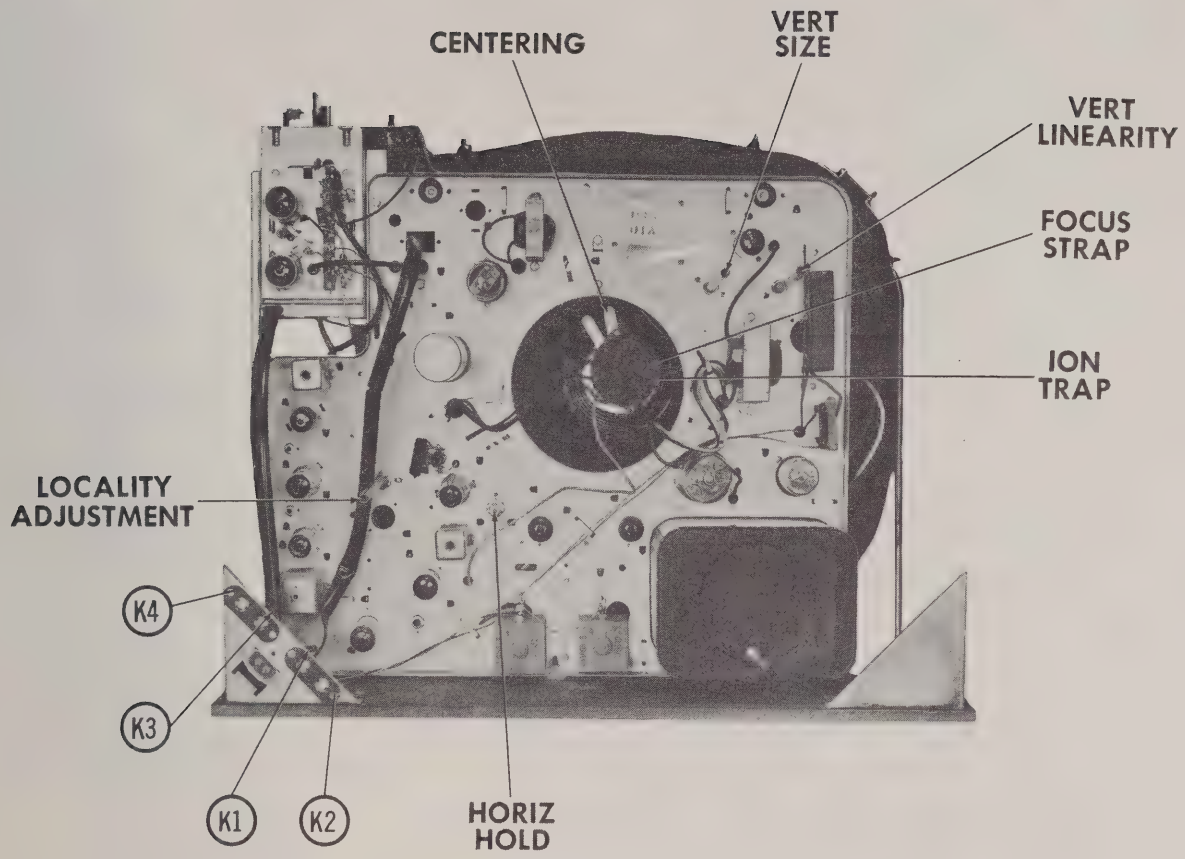
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	2AF4A	*■ 1200Ω	22K	4.5Ω	4Ω	.1Ω	22K	*■1200Ω		
V2	4BQ7A	† 1500Ω	230K	INF	6.5Ω	5.5Ω	INF	1.5Meg	0Ω	0Ω
V3	5U8	■ 5000Ω	360K	■ 33K	5.5Ω	4.5Ω	† 4800Ω	0Ω	0Ω	10K
V4	3BZ6	1.5Meg	47Ω	6.5Ω	7.5Ω	■ 1000Ω	■ 1000Ω	0Ω		
V5	3BZ6	1.5Meg	68Ω	7.5Ω	8.5Ω	■ 1000Ω	■ 1000Ω	0Ω		
V6	6CB6	.1Ω	120Ω	8.5Ω	9.5Ω	■ 1000Ω	■ 1000Ω	0Ω		
V7	12BY7A	• 140Ω	470K	0Ω	17Ω	17Ω	16Ω	† 4100Ω	■ 18K	0Ω
V8	5U8	■ 1.5Meg	.8Ω	■ 22K	16Ω	15Ω	■ 22K	220Ω	0Ω	2.2Meg
V9	3DT6	7Ω	680Ω	4Ω	3.5Ω	† 320K	■ 10K	560K		
V10	12L6GT	NC	11Ω	† 270Ω	† 54Ω	250K	TP	14Ω	¶	
V11	6CG7	■ 5600Ω	20K	2200Ω	14Ω	15Ω	40K	350K	100K	0Ω
V12	6CM7	‡730Ω	NC	215Ω	11Ω	9.5Ω	• ‡4Meg	• 550K	• ‡4Meg	• 7000Ω
V13	6CG7	† 100K	150K	1200Ω	1.5Ω	4Ω	† 8000Ω	5Meg	1200Ω	0Ω
V14	12DQ6	TP	19Ω	TP	† 10K	470K	TP	22Ω	0Ω	TOP CAP ‡7.5Ω
V15	12AX4GTA	NC	NC	¶	NC	† 54Ω	TP	24Ω	22Ω	
V16	1B3GT	PINS 1 thru 8 HAVE INFINITE RESISTANCE								TOP CAP ‡260Ω
V17	21ATP4A	0Ω	78K	PIN 6 ‡10.5Ω	PIN 10 ‡10.5Ω	PIN 11 • 330K	PIN 12 1.5Ω			

TP TIE POINT.
NC NO CONNECTION.
* MEASURED IN UHF POSITION.
■ MEASURED FROM PIN 8 OF V10.
† MEASURED FROM OUTPUT OF M2.
‡ MEASURED FROM PIN 3 OF V15.
• THIS READING WILL VARY, CONTROL SET FOR NORMAL OPERATION.
¶ THIS READING CAN VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.



TUBE PLACEMENT CHART



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

CHASSIS—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

1. Turn the set on and tune in a TV station, preferably with a test pattern.

2. Set the brightness and contrast controls for a normal picture.

3. Turn the horizontal hold clockwise until the picture loses sync. It may be necessary to switch off channel and back again for picture to lose sync.

4. Turn the horizontal hold slowly counter clockwise until the picture just falls into sync.

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	VHF Oscillator	2AF4A	
V2	RF Amplifier	6HJ7-A	
V3	Mixer-Converter	6U8	
V4	1st Video IF Amp	12GE8	
V5	2nd. Video IF Amp.	2BZ6	
V6	3rd. Video IF Amp.	2BZ6	
V7	Video Output	12BY7A	
V8	Sound IF-Sync Sep.	6U8	
V9	Audio Det.	1/2 6T8	
V10	Audio Output	1/2 6T8	
V11	Sound Amp.-Horiz. AFC	6U8	
V12	Vert. Osc.-Vert. Output	6LM1	
V13	Horiz. Osc.	6CG7	
V14	Horiz. Output	12DQ6	Note 1
V15	Damper	12AX4GTA	
V16	HV Rectifier	1B3GT	

Note: Some versions use 12DQ6A

PICTURE TUBE

ITEM No.	REPLACEMENT DATA			NOTES
	SENTINEL PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.	
V1	21ATP4-A	21ATP4A 21ATP4AB 21ATP4AC 21ATP4AD 21ATP4AE 21ATP4AF 21ATP4AG	21ATP4A 21ATP4B 21ATP4C 21ATP4D 21ATP4E 21ATP4F 21ATP4G	Silver screen Aluminized
	21AVP4	21VP4 2	21VP4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT	SENTINEL PART No.	AEROVOX PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1	150	150	270551-1	ATH-24	XA40E	FPU7	TMS-35	S-105 Q-181	TVL-1429
C2A	40/60	300	270554-1	ATH54-47-60		FP326.74 TC4081		MFD-4540	R336L *
B	40	300							
C	4300	150							
D	90	150							
C3A	5	150	270558-1	PR3-100	BC158	TC40 TCD2E55	TDLD-16	D-068	TVA-3467
B	200	150				TC53			
C4	30	300	270553-1	PRS500V30	BR3050	TC50	TD-20-500	S-515	TVA-1906

* Non-catalog item

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors

ITEM No.	RATING CAP.	RATING VOLT	SENTINEL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	REPLACEMENT DATA ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	1.2		250122-45	NPO-SI-1.2	TCZ-1.2		TCZ-1.2		5TCCB-V1	
C6			250686-10							
C7			250686-10							
C8	1.3		250122-13	NPO-SI-1.3	TCZ-1		TCO-1		5TCCB-V1	
C9	47		250175-2	N750-SI 47	TCN-47	C10Q47U	TCT-47	NT-547	5TCU-Q47	N750
C10	100		250686-11		TCU-100					N1500
C11	52		250122-51							
C12	3.3-4.7		250122-47	529-2		515-E				
C13	470		250175-4	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C14	470		250175-5	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C15	470		250175-6	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C16	39		250175-20	N750-SI 39	TCN-39	C10Q39U	TCT-39			N750
C17	39		250175-39	N750-SI 39	TCN-39	C10Q39U	TCT-39			N750
C18	10		250121-127	NPO-SI 10	TCZ-10	LT9Q1	TCO-10	ZT-551	5TCC-Q1	
C19			250686-8							
C20	470		250175-3	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C21	470		250175-8	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C22	1		250121-16	NPO-SI 1.0	TCZ-1				5TCCB-V1	
C23	1.26		250686-5							
C24	1.5		250686-6							
C25	6.5		250207-5	NPO-SI 15	TCZ-15	LT9Q15	ED-15	UC-5415	5TCC-Q15	
C26	470		250175-6	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C27	470		250175-8	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C28	470		250175-3	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C29	7.0		250686-7							
C30	8.5		250122-125	NPO-SI 8.5	TCZ-5E8	C30Y8EC	TCT-5.8	ZT-5588	5TCCB-V8E	
C31	9.0		250686-9	NPO-SI 9.0	TCZ-9	C30Y9EC	TCT-9	ZT-5590	5TCCB-V9E	
C32	470		250175-4	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C33	470		250175-5	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C34	1.0		250686-14	NPO-SI 1.0	TCZ-1		TCO-1		5TCCB-V1	
C35	10		250686-15	NPO-SI 10	TCZ-10	LT9Q1	TCO-10	ZT-551	5TCC-Q1	
C36	1500		250121-102							
C37	150		250175-12	BPD-0015	DD-152	BYA10D15	ED-0015	UC-5215	5HK-D15	
C38	150		250175-13	BPD-0015	DD-152	BYA10D15	ED-0015	UC-5215	5HK-D15	
C39	1500		250175-10	BPD-0015	DD-152	BYA10D15	ED-0015	UC-5225	5HK-D25	
C40	68		250175-43	N750-SI 68	TCN-68	C10Q68U	TCT-68		5TCU-Q68	N750
C41	470		250207-50	BPD-00047	DD-471	LT9T47	ED-470	UC-5347	5GA-T47	
C42	15			NPO-SI 15	TCZ-15	C10Q15C	TCZ-15		5TCC-Q15	NPO
C43	150		250175-38	BPD-00053	DD-531	LT9T53	ED-530		5TCC-Q53	
C44	15			NPO-SI 15	TCZ-15	C10Q15C	TCZ-15		5TCC-Q15	NPO
C45	15		250159-1080	1686-00047		SR5T5T			MB-347	
C46	680		250207-51	SI 680		LT9T68	ED-680	UC-5368	5GA-T68	
C47	1,000		250175-14	BPD-001	DD-102	BYA10D1	ED-1000	DC531	5HK-D1	
C48	3.3	300	250122-123	PTS500-4	DF-054	C10S3P3		DC531	5HK-P1	
C49	82		250068-168	SI 33	TCZ-33	LT9Q33	ED-33	UC-5433	5GA-Q33	
C50	5000		250175-1	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C51	470		250207-60	SI 470		LT9T47	ED-470	UC-5347	5GA-T47	
C52	1	400	250121-17	P488-1		CL84P1			GEM-401	
C53	220		250175-27	BPD-00022	DD-221	LUT221	ED-220	UC-5322	5GA-T22	
C54	680		250175-30	BPD-00068	DD-681	LUT68	ED-680	UC-5368	5GA-T68	
C55	1000		250175-14	BPD-001	DD-102	BYA10D1	ED-1000	DC531	5HK-D1	
C56	62		250068-165	NPO-SI 1.0	TCZ-10	C10Q1C	TCO 10	ZT-541	5TCC-Q1	NPO
C57	25	300	250-72-0	P268A-25		CU1P25			GEM-2025	
C58	1,000		250175-14	BPD-001	DD-102	BYA10D1	ED-1000	DC531	5HK-D1	
C59	1,000		250175-14	BPD-001	DD-102	BYA10D1	ED-1000	DC531	5HK-D1	
C60	5000		250175-1	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C61	68		250068-167							NOTE
C62	5000		250175-1	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C63	10000		250175-2	BPD-01	DD-103	BYA501	ED-01	DC531	5HK-S1	
C64	1000		250207-52	BPD-001	DD-102	BYA10D1	ED-1000	DC531	5HK-D1	
C65	.5		250068-168	SI 18	DS-181	LT9Q5	ED-18	DC-5418	5HK-Q5	
C66	.047	200	250202-11	BPD-06	DF-503	CUB234T			GEM-3247	
C67	5000		250175-1	BPD-005	DD-502	BYA10D5	ED-005	DC525	5HK-D5	
C68	10000		250175-2	BPD-01	DD-103	BYA501	ED-01	DC531	5HK-S1	
C69	.0033	600	250201-4	BPD-0033	DF-333	CUB4D33	ED-0033	GEM-4233	MTM-D33	
C70	.022	400	2502-9	BPD-02	DF-303	CUB4S22	ED-02	GEM-4122	MTM-S22	
C71	.01	400	2502-1	BPD-01	DD-103	CUB4S1	ED-01	GEM-4141	MTM-S1	
C72	.047	400	250201-11	BPD-05	DF-503	CUB4S47		GEM-4147	MTM-S47	
C73	.022	600	250201-9	BPD-02	DF-303	CUB4S22	ED-02	GEM-4122	MTM-S22	
C74	.022	600	250201-9	BPD-02	DF-303	CUB4S22	ED-02	GEM-4122	MTM-S22	

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	SENTINEL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	REPLACEMENT DATA ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C75	047	400	250201-11	BPD 05	DF-503	CUB4S47		GEM-4147	MTM-S47	
C76	470		250207-50	BPD-00047	DD-471	BYA10T47	ED-470	UC-5347	5GA-T47	
C77	1000		250175-14	BPD-001	DD-102	BYA10D1	ED-1000	DC531	5HK-D1	
C78	.0033	600	250201-5	BPD-0033	DF-333	CUB4D33	ED-0033	GEM-4222	MTM-D22	
C79	1000		250175-14	BPD-001	DD-102	BYA501	ED-1000	DC531	5HK-D1	
C80	.01	600	250201-7	BPD-01	DD-103	CUB4S1	ED-01	GEM-4141	MTM-S1	
C81	330		250159-1088	1464-00038		SR5T39			MB-339	
C82	1000		250159-1090	1464-00019		SR5T29			MB-329	
C83	470		250159-1090	1464-00047		SR5T47			MB-347	
C84	6000		2bb15-1	BPD-006	DD-602	BYA60S	ED-005	DC525	5HK-D5	
C85	.047	400	250201-11	BPD-05	DF-503	CUB4S47		GEM-4147	MTM-S47	
C86	.082	300	250123-17			CUB3S82		GEM-3283	MTM-S82	
C87	150	3000	250175-43	HVD-30-150	DD30-151	HVB30T15			30GAB-T15	
C88	68	3000	250175-33	HVD-30-68	DD30-680	HVA30Q68		DC30468		
C89	.047	400		BPD-05	DF-503	CUB4S47		GEM-4147	MTM-S47	
C90	1000		250175-14	BPD-001	DD-102	BYA501	ED-1000	DC531	5HK-D1	
C91	10000	1000	250129-3							
C92	1000		250175-14	BPD-001	DD-102	BYA501	ED-1000	DC531	5HK-D1	
C93	1000		250175-14	BPD-001	DD-103	BYA501	ED-1000	DC531	5HK-D1	
C94	1000		250175-14	BPD-001	DD-102	BYA501	ED-1000	DC531	5HK-D1	
C95A	1500		250129-8	BPD-1X0015	DD5-152	BYC5DD15	ED5-0015	DC5E15	5HK-X15	
B	1500									

CONTROLS

ITEM No.	RATING RESIST.	RATING WATTS	REPLACEMENT DATA SENTINEL PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	330K	½	230123-11					Volume - Tap ② 100K
B	Switch						PTA26L	
R2	1500Ω	½	230123-9				PTA26L	Contrast - Tap ② 200Ω
R3	2.5Meg	½	D230148-2					Brightness - Note 1
R4	2.5Meg	½	D230148-3				PTA26L	Vert. Hold - Note 2
R5	8Meg	½	230852-3					Vert. Size
R6	750Ω	½	230654-2				PTA18L	Vert. Lin.

Note 1. Alternate part #230856-1, 8Meg may be used in some versions.
Note 2. Alternate part #230853-1, 1Meg, with 300K stop may be used in some versions.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SENTINEL PART No.	IRC PART No.	NOTES
R7	100K		230104-86	BTS-100K	
R8	22K		230104-78	BTS-22K	
R9	820Ω	1	230145-81	BTA-820	
R10	100K		230104-86	BTS-100K	
R11	470K		230104-94	BTS-470K	
R12	470K		230104-94	BTS-470K	
R13	560Ω		230104-65	BTS-560	
R14	820Ω		230104-73	BTS-820	
R15	33K		230104-80	BTS-33K	
R16	330K		230104-92	BTS-330K	
R17	180K		230104-89	BTS-180K	
R18	47K		230104-83	BTS-47K	
R19	10K		230104-74	BTS-10K	
R20	10K		230104-74	BTS-10K	
R21	150Ω		230104-52	BTS-150	
R22	3300Ω		230104-66	BTS-3300	
R23	47000 5%	1	250095-175	BTA-47000 5%	
R24	330Ω		230104-56	BTS-330	
R25	1500Ω	1	230105-64	BTA-1500	
R26	1000Ω		230094-13	BTS-1000	
R27	1000Ω		230104-62		
R28	1000Ω		230094-13	BTS-1000	
R29	470Ω		230104-46	BTS-47	
R30	1000Ω		230094-13	BTS-1000	
R31	18K		230104-77	BTS-18K	
R32	100Ω		230104-50	BTS-100	
R33	68Ω		230104-48	BTS-68	
R34	18K		230104-77	BTS-18K	
R35	1000Ω		230094-13	BTS-1000	
R36	120Ω		230104-51	BTS-120	
R37	1.5Meg		230094-32	BTS-1.5Meg	
R38	47000 5%		230094-175	BTS-4700 5%	
R39	470K		230104-94	BTS-470K	
R40	150K 5%		230104-86	BTS-150K 5%	
R41	4000Ω	6	240017-19	PW-4000	
R42	130Ω		230104-51	BTS-120	
R43	18K	2	230105-76	BTS-18K	
R44	10K	1	230105-74	BTA-10K	
R45	100K		230104-86	BTS-100K	
R46	2.2Meg		230104-32	BTS-2.2Meg	
R47	2.2Meg		230094-33	BTS-2.2Meg	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA SENTINEL PART No.	IRC PART No.	NOTES
R48	22K	1	230105-78	BTA-22K	
R49	220Ω		230104-54	BTS-220	
R50	560K		230104-96	BTS-560K	
R51	220K		230104-90	BTS-220K	
R52	10K	1	230105-74	BTA-10K	
R53	560Ω		230104-60	BTS-560	
R54	68K		230104-84	BTS-68K	
R55	560K		230104-96	BTS-560K	
R56	470K		230104-94	BTS-470K	
R57	33K		230104-80	BTS-33K	
R58	1.5Meg		230094-32	BTS-1.5Meg	
R59	470K		230104-94	BTS-470K	
R60	22K		230104-78	BTS-22K	
R61	2200Ω		230104-66	BTS-2200	
R62	5600Ω		230104-71	BTS-5600	
R63	2.2Meg		230094-33	BTS-2.2Meg	Note 1
R64	270K			BTS-270K	Note 1
R65	10K		230104-74	BTS-10K	
R66	68K		230104-84	BTS-68K	
R67	56000Ω	2	230106-72	BTS-5600	
R68	680Ω		230104-60		
R69	680Ω		230104-60		
R70	100K		230104-86		
R71	150K		230104-88		
R72	100K		230104-86		
R73	4.7Meg		230094-35	BTS-4.7Meg	
R74	3.3Meg		230094-34	BTS-3.3Meg	
R75	68000Ω		230106-73		
R76	12000Ω		230104-63	BTA-1200	
R77	150K		230104-88	BTS-150K	
R78	5600Ω		230104-71		
R79	100K		230104-86		
R80	470K		230104-94		
R81	470Ω		230104-58	BTS-470	
R82	10K	2	230104-74	BTS-10K	
R83	4.7Ω		230109-3	BWJ-4.7	
R84	3.3Meg		230094-34	BTS-3.3Meg	
R85	2200Ω		230104-66	BTS-2200	
R86	360Ω	20	240071-29		
R87	470K		230104-94	BTS-470K	
R88	470K		230104-39		
R89	47K		230104-82		

Note 1. Not used in some versions.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA SENTINEL PART No.	Halldorson PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	Vert. Osc	320801-4							
T2	Horiz. Output	320811-1							
T3	Vert. Output	320810-1							
T4A	Yoke-Horiz. (21MG)	261223-1	Z1804 DF607Ⓣ	A-3037 MFD-8Ⓣ	222TI 2261X Ⓓ	V313 Y10F19/43 Ⓓ	A-8123 DY-16AⓉ	26052 Y-16Ⓣ	A-102X Y-16 NW9
B	90Vt. (16MG) Rear Cover and Centering Device	261223-1							YCI

Ⓣ Use original rear cover and centering device and original yoke damping network if necessary.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI	SEC	REPLACEMENT DATA SENTINEL PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T5	2500Ω	3-4Ω	320802-2	Z1111	A-2928	A-3876	22843	S-4X	

COILS (RF-IF)

ITEM No.	USE	SENTINEL PART No.	NOTES
L1	RF Choke	360574-30	
L2	RF Choke	360574-30	
L3	Cathode Choke	360533-7	
L4	Fil. Choke	360574-8	
L5	Fil. Choke	360574-8	
L6	RF Choke	360574-8	
L7	UHF I.F Output	360574-13	
L8	RF Choke	360574-50	
L9	IF Trap	360415-38	
L10	IF Trap	360415-39	

ITEM No.	USE	SENTINEL PART No.	NOTES
L11	Ant. Trans	350481-2	
L12	RF Choke	360502-8	4.7 Microhenries, IRC part #CLA
L13	UHF IF Input Coil	360648-1	
L14	Mod. Coil	360421-66	
L15	RF Choke	360502-1	.47 Microhenries, IRC part #CLA
L16	RF Choke	360801-9	1 Microhenry
L17	Mixer Plate Coil	360540-1	

ITEM No.	USE	SENTINEL PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L18	1st. Video IF	361230-1				
L19	2nd. Video IF	361303-1				Includes 47.25MC trap
L20	3rd. Video IF	361212-1			6321	Includes 41.25MC trap
L21	Tweet Trap	361210-1	19-1005		6813	11 Microhenries
L22	Shunt Peaking Coil	361224-2	19-1500	TV-186	6174	500 Microhenries
L23A	4.5MC Trap	361218-1		TV-130		
B	1st. Sound IF					
L24	Series Peaking Coil	361254-3	19-3280 *	TV-188 *	6181 *	260 Microhenries, wound on 6800Ω resistor
L25	Shunt Peaking Coil	361224-4	19-3250	TV-184	6181	266 Microhenries
L26	Shunt Peaking Coil	361224-1			6148 a	738 Microhenries, wound on 6800 resistor
L27	Series Peaking Coil	361254-5	19-3255 a		6183 a	130 Microhenries, wound on 3300Ω resistor
L28	2nd. Sound IF	361218-1				
L29	Quadrature Coil	361307-1		TV-131		
L30	RF Choke	361211-1	19-1004		6810	6.4 Microhenries

* Parallel with 6800Ω resistor.
a Parallel with 6800 resistor.
b Parallel with 3300Ω resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES PRI	SEC	REPLACEMENT DATA SENTINEL PART No.	MEISSNER PART No.	MERIT PART No.	RCA TYPE No.	Ram PART No.	Thordarson PART No.	NOTES
L31	95Ω		361209-1	19-1576 *	TV-163 *	6210 *		1SS-5*	

* Drill one mounting hole.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	D C RESISTANCE	INDUCTANCE @ CURRENT 1000 (^)	REPLACEMENT DATA SENTINEL PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L32	230A	54Ω	1 HY.	230803-2	C5037 Ⓣ	C-2990Ⓣ	C-2327	28C44 Ⓣ	C-24X

Ⓣ Drill one new mounting hole

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SENTINEL PART No.	REPLACEMENT DATA
K1	Ant. Input	470MMF, 1Meg	250751-1	Centralab DA532
K2	Ant. Input	470MMF, 1Meg	250751-1	Centralab DA532
K3	Ant. Input	470MMF, 1Meg	250751-1	Centralab DA532
K4	Ant. Input	470MMF, 1Meg	250751-1	Centralab DA532
K5	Vert. Integrator	2000MMF, 5000MMF, 5900MMF, 22K, 820Ω, 820Ω	250755-1	Aerovox PA501 Centralab PC-104 Erie 1403-0 Sprague 103S12
K6	Sync Coupler	25MMF, 150MMF, 10000MMF, 2 2Meg, 470K		

RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	REPLACEMENT DATA SENTINEL	FEDERAL	GENERAL ELECTRIC	INTERNATIONAL	MALLORY PART No.	SARKES TARZIAN PART No.	NOTES
M1	230A	530581-5 Ⓒ	1090A 1	1N1007 2	RS300L 1	RS300 1	300 Ⓒ	
M2	230A	530751-1 Ⓒ	1090A 2	1N1008 2	RS300L 2	RS300L 2	300 Ⓒ	

Ⓒ Selenium type. Ⓓ Germanium type.

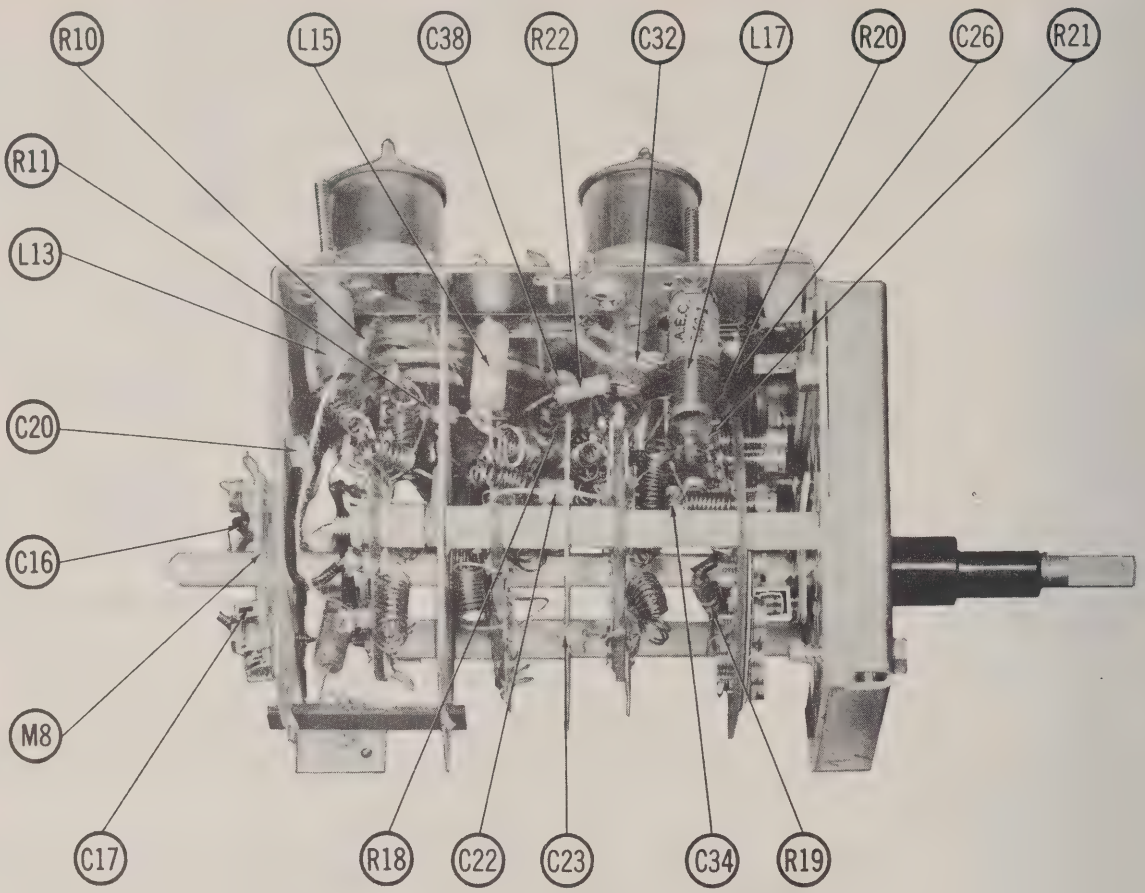
CRYSTAL DIODES

ITEM No	ORIG. TYPE	REPLACEMENT DATA SENTINEL PART No.	CBS PART No.	SYLVANIA PART No.	NOTES
M3	4JR2C5	530356-1	1N82A	1N82A	UHF Mixer (Clip-in)
M4	1N295 *		1N60	1N60	Video Det. (Pigtail)

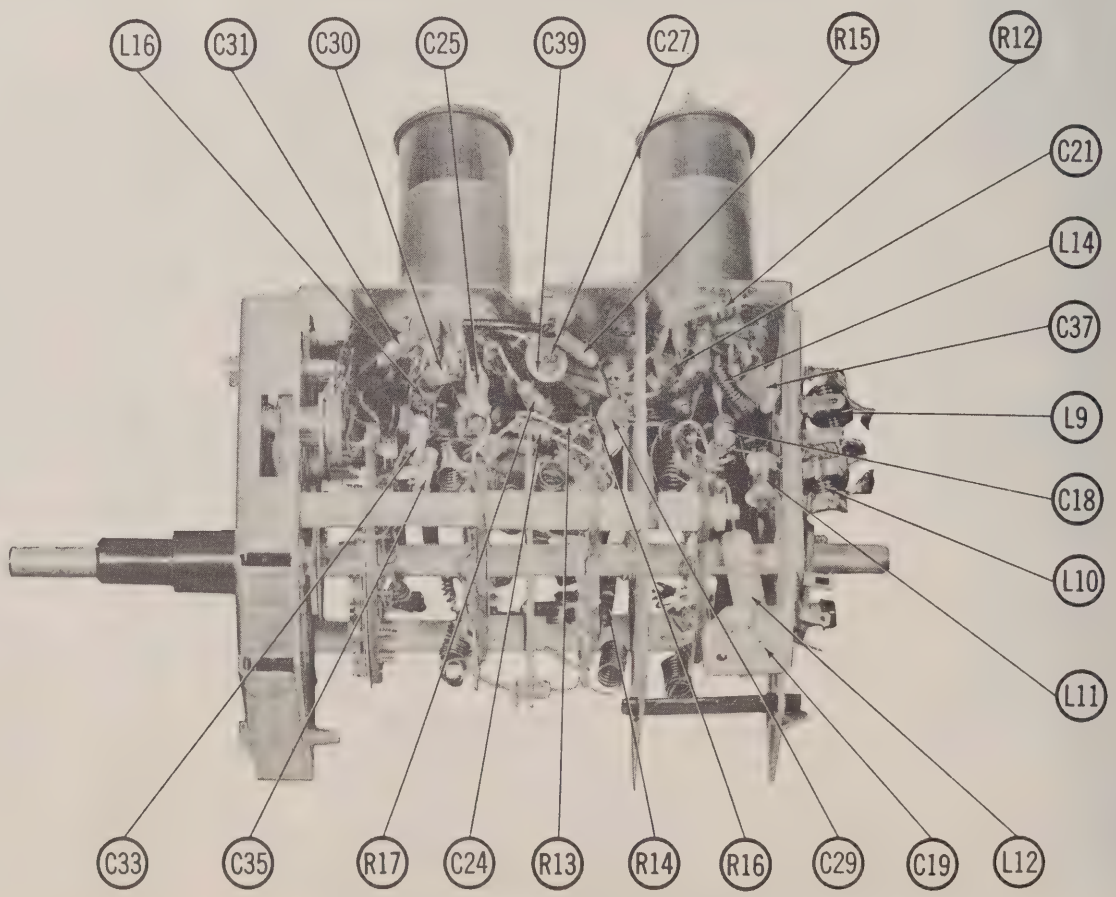
* A 1N54 may be used in some versions

MISCELLANEOUS

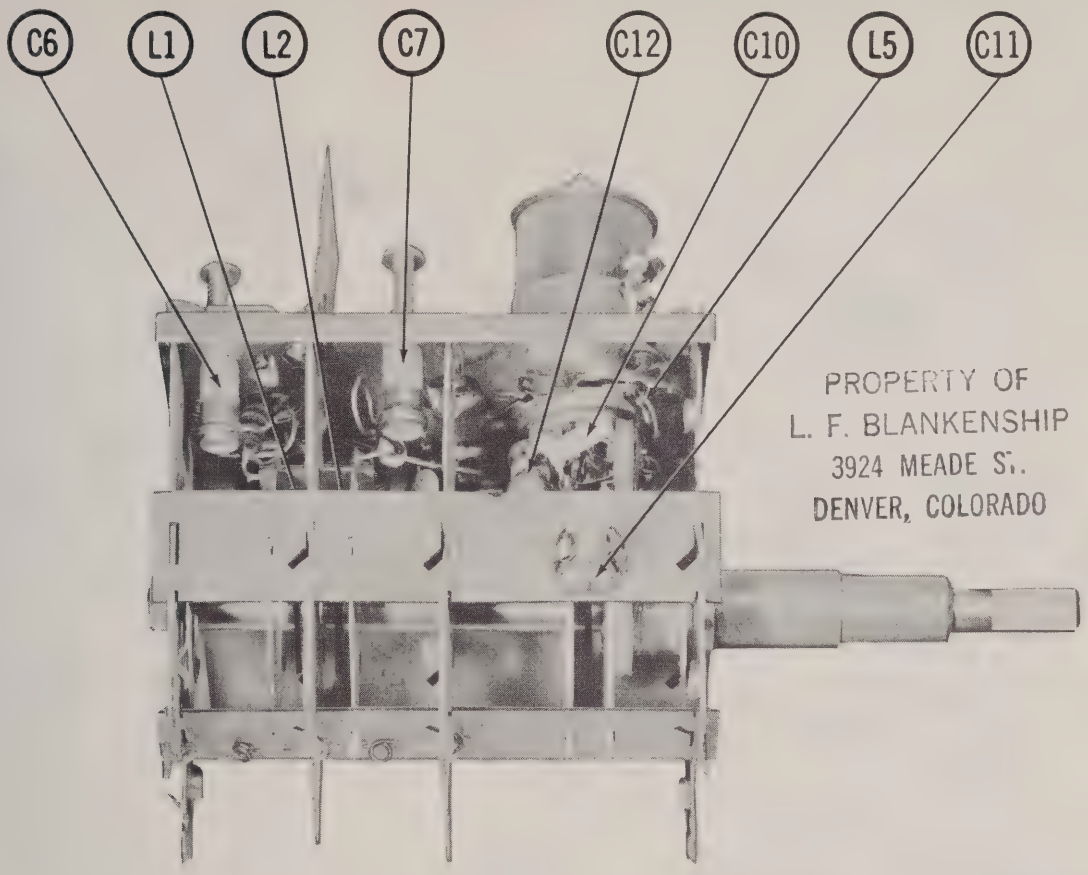
ITEM No.	PART NAME	SENTINEL PART No.	NOTES
M5	Tuner	700556-2	UHF
M6	Tuner	700556-2	VHF
M7	Video Det. Assy.	361204-1	Includes 4th. Video IF, Caps., Series peaking coil, M4
M8	Switch	160347-1	UHF-VHF (Rotary wafer type)
M9	Switch	160810-2	Locality Adjustment (Rotary wafer type)
M10	Centering Device	361223-1	Includes rear yoke cover
M11	Ion Trap	360492-9	



VHF TUNER LEFT SIDE

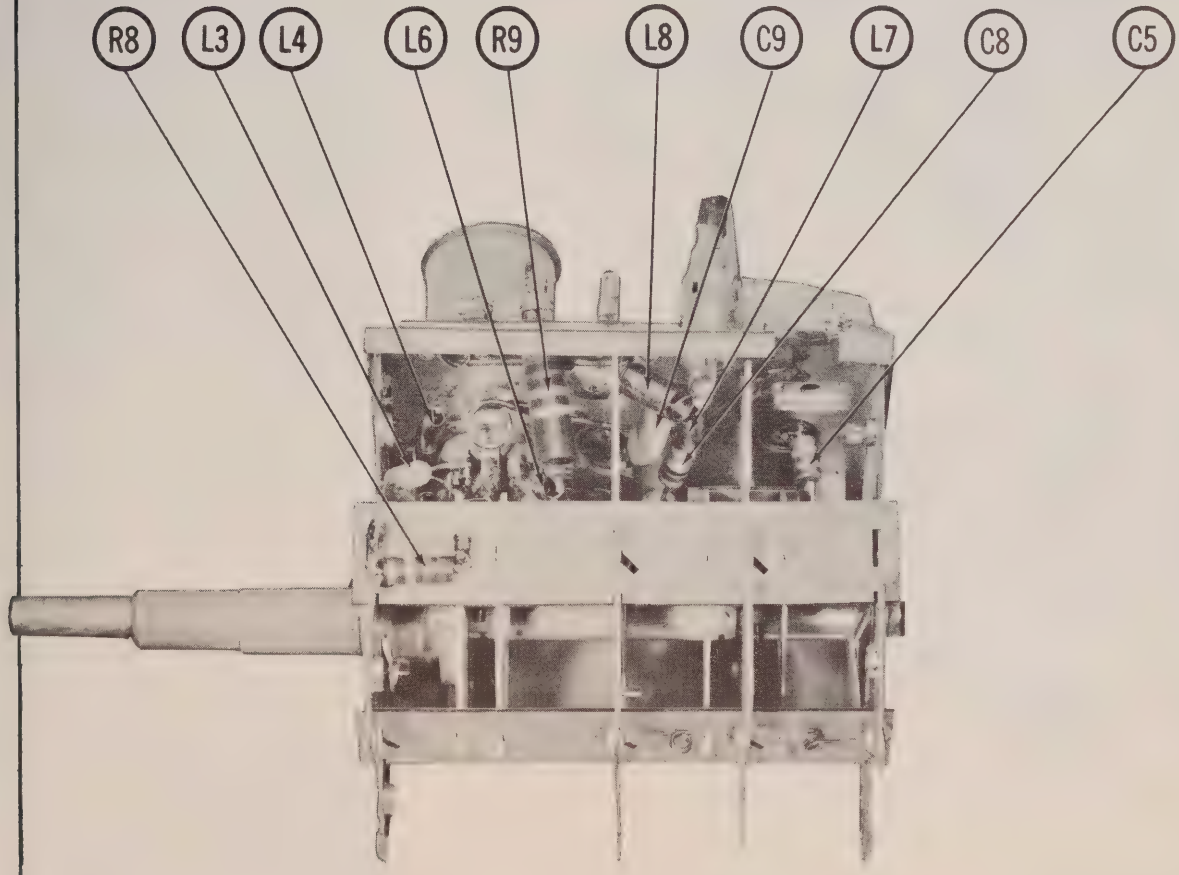


VHF TUNER RIGHT SIDE

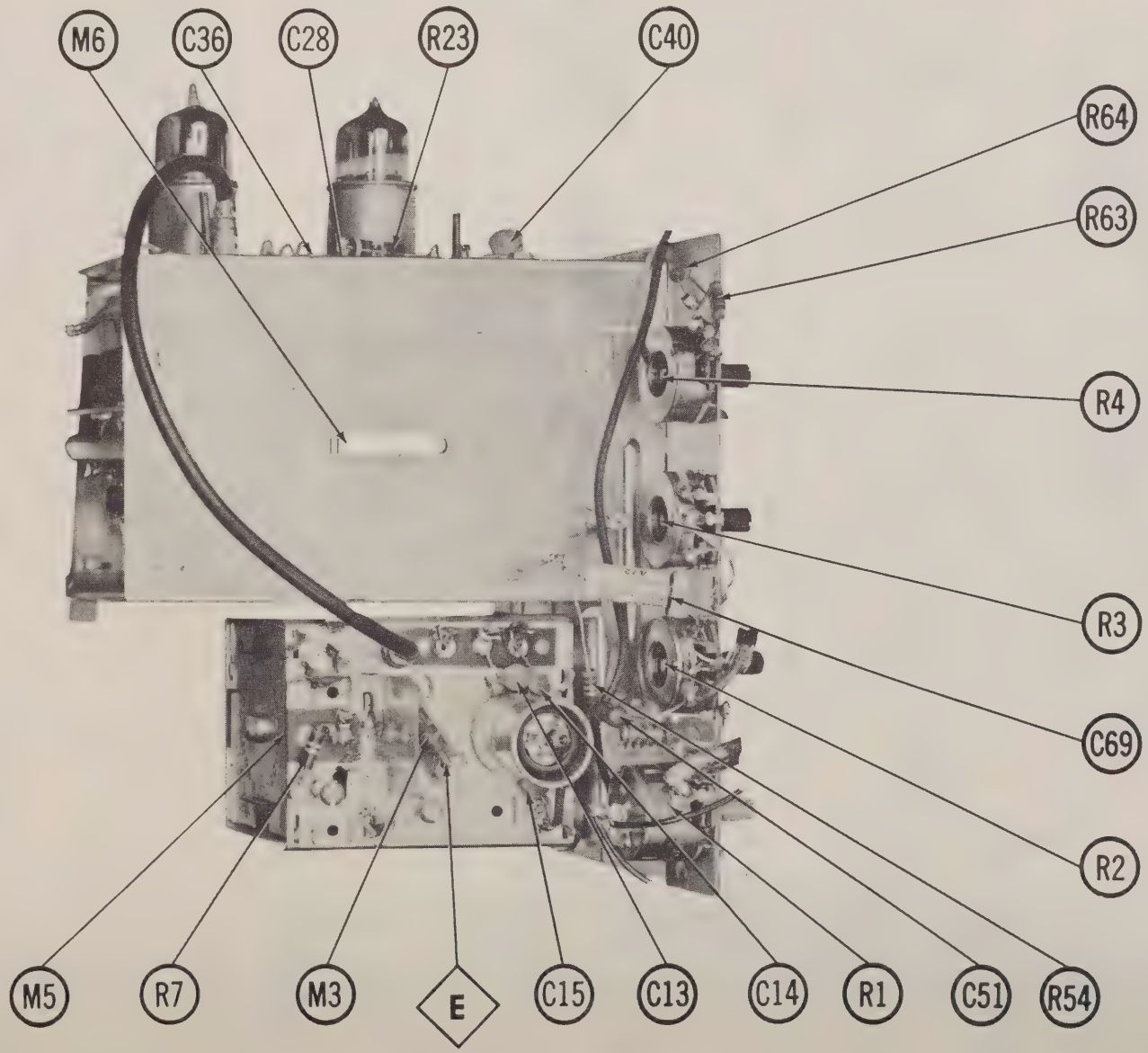


PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

UHF TUNER LEFT SIDE



UHF TUNER RIGHT SIDE



TUNER & CONTROL PANEL ASSEMBLY

SILVERTONE Ch. 567.40000, 1, 2, 3, 6, 9, 567.40100, 1, 2, 3, 5, 6, 8, 9,
567.41000, 1, 2, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19,
567.41100, 1, 2, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19

SILVERTONE Ch. 567.40000, 1, 2, 3, 6, 9, 567.40100, 1, 2, 3, 5, 6, 8, 9,
567.41000, 1, 2, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19,
567.41100, 1, 2, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

GENERAL INFORMATION

The Silvertone four speed Record Changer is designed to play 78 RPM, 45 RPM, 33 1/3 RPM and 16 RPM records of standard commercial dimensions.

Features of this changer include playing and automatically changing as many as ten 12" records, twelve 10" records, ten 7", 33 1/3 RPM records, or fifteen 7", 45 RPM records, or any assortment of ten 7", 10" and 12" records of the same speed (16, 33 1/3, 45 or 78 RPM).

Seven inch, 45 RPM records can be played by inserting an adaptor in the record or by using a special 45 RPM spindle that is available as an accessory.

Some changers of the Silvertone Models employ an automatic shut-off mechanism that shuts the changer off after the last record has been played. On changer not having this feature the last record will be repeated.

Connect this changer only to an outlet supplying 117 volts, 60 cycles, AC, unless otherwise specified.

Supplied by:

Sears, Roebuck & Co.
925 S. Homan Street
Chicago 7, Illinois

This material compiled and published by

HOWARD W. SAMS & CO., INC., INDIANAPOLIS, INDIANA

Copyright 1957 • All Rights Reserved

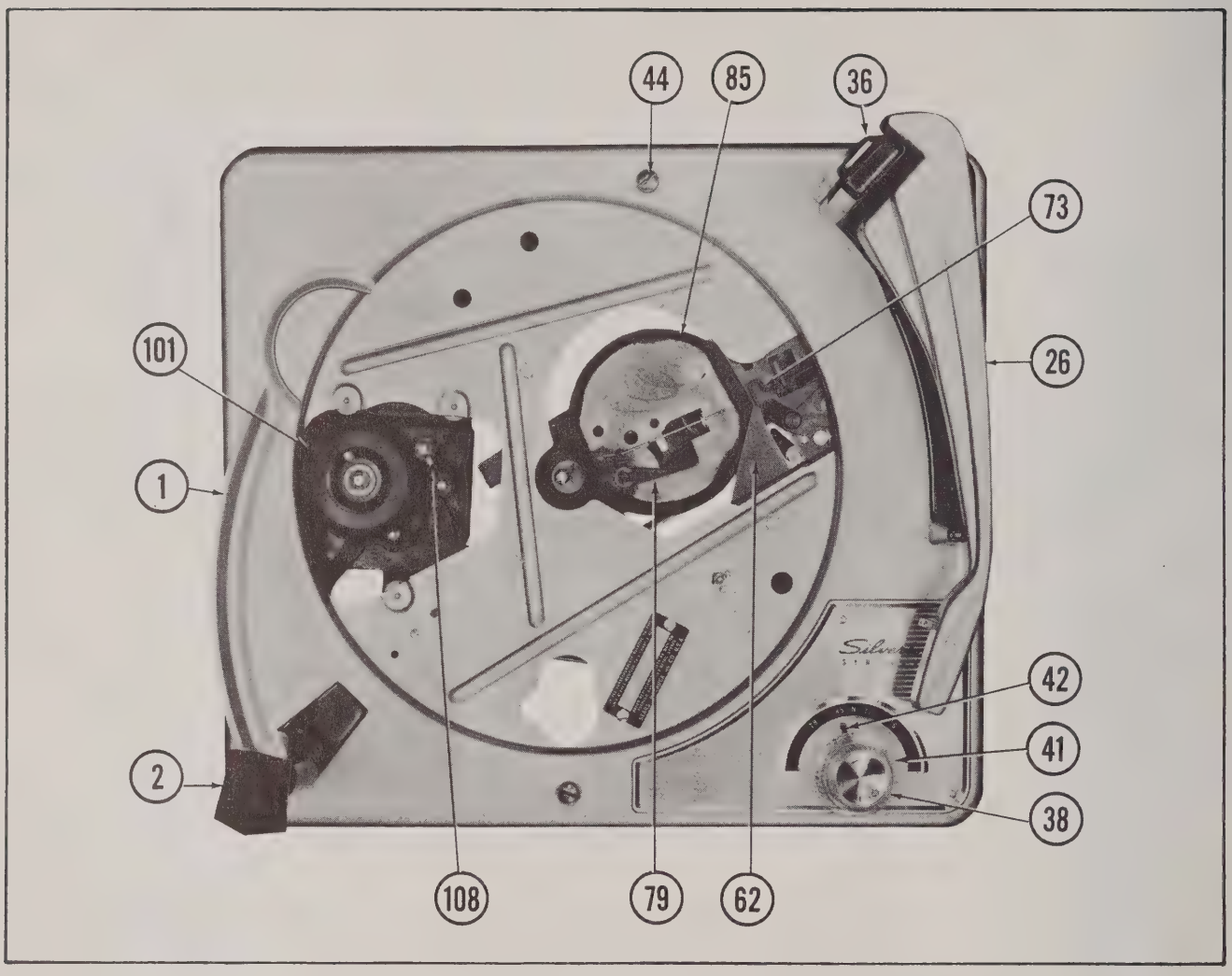


FIGURE 1

Difference In Silvertone Four Speed Changers.

The record changers are similar mechanically the major differences are the automatic shut-off mechanism used on some models and the record size selector assembly used in some models.

NOTE: For information concerning the above, refer to exploded view and parts' list.

PREPARING FOR OPERATION

Shipping Bolts-

Before placing in operation, the changer must be floating freely on the mounting springs (45). During shipment the mechanism is secured by means of two shipping bolts (43 and 44). To float the changer turn the two shipping bolts in a clockwise direction as far as possible.

Leveling Record Changer-

For best results, the record changer should be level. Use a suitable level on the baseplate. Adequate shims can be used under the baseplate or cabinet to achieve perfect level.

Loading-

1. Lift straight up on the pressure arm cap until the pressure arm (1) clears the spindle (23). Swing the pressure arm to the left until its locating pin drops into the locating groove of the pressure arm housing (5).

NOTE: 16, 33 1/3, 45 and 78 RPM records cannot be intermixed. The speed control knob (41) must be reset for each type of record.

2. Place records on spindle (23) and lower to offset shelf. Hold records level and replace pressure arm (1) over the records.

To Play 78 RPM Records-

1. Speed control knob (41) must be in the "78" position.

2. On changers using a turnover needle, the turnover lever must be set for "78".

3. To start the changer turn "On-Off" knob (38) to "Rej." position and release slowly to "On" position. The Silvertone Changer will now operate automatically until the last record has been played, at which time the tone arm will return to its rest and the mechanism will shut-off.

NOTE: Some changers do not employ the automatic shut-off mechanism.

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

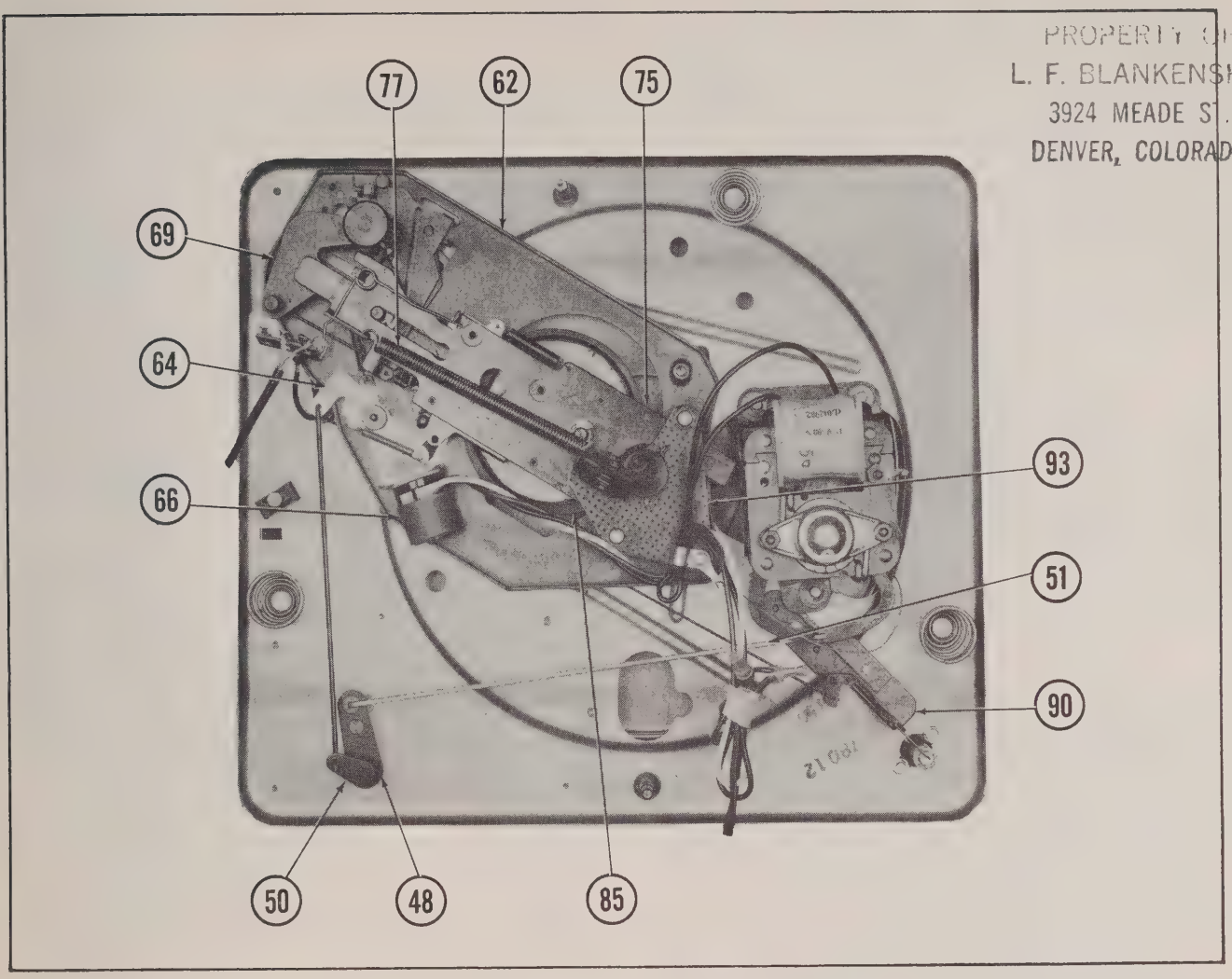


FIGURE 2

To Play 33 1/3 RPM Records-

1. Speed control knob (41) must be in the "33" position.

2. On changers using a turnover needle, the turnover lever must be in "LP" position.

To Play 45 RPM Records-

1. Speed control knob (41) must be in the "45" position.

2. On changers using a turnover needle, the turnover lever must be in "LP" position.

3. 45 RPM records are manufactured with a 1 1/2" center hole. If used with the conventional spindle (23), an adaptor must be inserted in the record; however, a special spindle is available that eliminates the need of adaptors.

45 RPM Spindle Operation Instructions-

1. Lift up on pressure arm (1) and turn it to the left as far as possible.

2. Be sure tone arm is in its rest position.

3. Grasp spindle between thumb and forefinger; with forefinger on actuator (109), squeeze actuator slightly and place spindle on center post (23) with actuator facing the selector housing (36). Turn the spindle slightly to the left, or right, until the slot in the bottom of the spindle lines up with the gate on center post (23). Push down on the spindle until it comes to rest on the turntable. The 45 RPM spindle is now ready to operate.

To Operate-

1. Place a stack of records, up to 15, on the spindle. Turn pressure arm (1) to the right and lower it onto the records.

2. Proceed as described "To Play 45 RPM Records".

Rejecting-

To reject a record at any time while changer is operating, turn "On-Off" knob (38) to "Rej." and slowly release to "On" position.

Neutral Position-

When the changer is to be out of service for any length of time, it should be left in the neutral position. This position is identified by the letter "N" engraved on the baseplate or speed control knob (41). When in this position the motor shaft and idler wheel do not

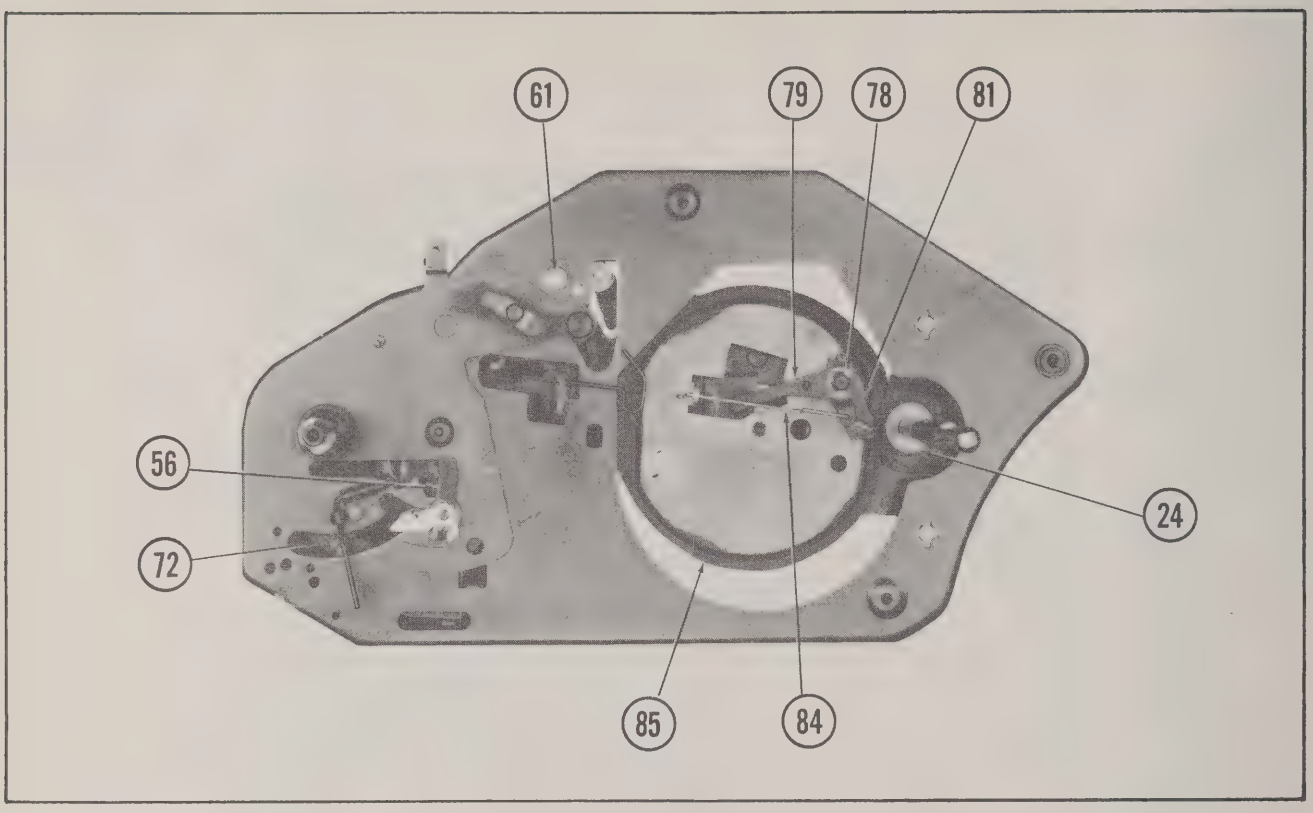


FIGURE 3

come in contact with the drive wheels, thereby preventing any flat spots from developing on the rubber tires.

CHANGE CYCLE

This changer is provided with what is known as a velocity trip mechanism. The change cycle is started by the faster inward motion of the tone arm when the needle enters the lead-out groove at the end of a record.

The tone-arm assembly and the tone-arm actuating lever (69) are secured at opposite ends of the tone arm shaft so that they move in unison. As the tone arm nears the end of a record, the tone-arm actuating lever (69) pushes the push trip rod (73), which, in turn, engages push trip rod (84) rotating the pawl locator (79) to move the trip pawl (81) toward the turntable hub by action of the thrust washer (80). While a record is playing, the small motions of the trip pawl (81) are not sufficient to trip the mechanism because, on each revolution of the turntable, the wiping action by the trip cam (point "A" on exploded view) moves the trip pawl (81) back far enough to clear the trip cam.

When the needle enters the lead-out grooves, causing the tone arm to advance rapidly toward the spindle, the trip pawl (81) is moved far enough to definitely engage the trip cam (point "A" on exploded view). As the trip cam engages the trip pawl (81), cam wheel (94) is pushed in a counter-clockwise direction until it makes contact with the serrated portion of the turntable hub. Since the turntable is rotating, the eccentric cam wheel (85) also rotates, pushing the main slide (75) away from the spindle.

As the main slide (75) begins to move, the cam surface (point "B" on exploded view) pushes the lift shaft (58) upward, raising the tone arm clear of the record. At the same time, spring (76) contacts the tone-arm actuating lever (69) swinging the tone arm clear of the turntable.

As the cam wheel (85) continues to rotate, the positioning stud on the main slide (75) contacts and moves the pawl locator (79) across the cutout in the cam wheel (85), resetting the trip pawl (81) for the next change cycle.

At the same time, the lift rod (55) rides down the incline on the rear of the main slide (75), allowing the selector lever assembly (13) to pivot upward and the friction slide (20) to be pushed downward by return spring (19). As the selector lever assembly (13) pivots outward, the positioning rod (17) drops down in front of the tabs on the lower selector assembly (71).

The front edge of the slot (point "C" on exploded view) in the main slide (75) now contacts the ejector link on the bracket assembly (93A). The ejector link moves the push-off shaft (23A) upward, actuating the spindle assembly (23), dropping a record to the turntable.

Simultaneously, the stud on the tone-arm actuating (69) engages the lower selector assembly (71) moving it clear of the locking lever (54). The main slide (75), at this time, starts moving toward the spindle.

If a 7" record is being changed, the positioning rod (17) remains in front of the 12" selector lever and the 10" selector lever (all part of item (71), preventing them from engaging with the stud on the tone-arm actuating lever (69). The 7" selector lever is now

free to move against the stud on the tone-arm actuating lever (69).

If a 10" record is being changed, the edge of the record strikes the selector lever arm on the upper selector assembly (13), moving it down just far enough to lift the positioning rod (17) clear of the 10" selector lever (part of item 71). In this position, the 12" selector lever is locked in position and the 7" and 10" selector levers contact the stud on the tone-arm actuating lever (69). Since the set down step in the 10" selector lever is nearer the stud, the stud will engage the set-down step in the 10" selector lever first, assuring the proper set-down point for 10" records.

If a 12" record is being changed, the edge of the record strikes the arm which lifts the lift rod (17) clear of all three selector levers. In this position, the stud on the tone-arm actuating lever (69) engages with the set-down step in the 12" selector lever first, positioning the tone arm for the 12" set-down point.

As the main slide (75) continues moving toward the spindle, one of the selector levers, which has been positioned by the size record being changed (see above), engages the stud on the tone arm actuating lever (69) pushing the tone arm in over the turntable, by pressure applied by the tone arm positioning spring (70), until the stud engages the set-down step in the selector lever (71), stopping the inward travel of the tone arm. The tone arm is then lowered to the lead in groove of the record as the lift shaft (58) rides down the cam surface (point "B" on exploded view) on the main slide (75).

As the tone arm is lowered to the record, the stud on the rear of the main slide (75) contacts the lower selector assembly (71) and pushes it back far enough to release the set-down step from the stud on the tone-arm actuating lever (69), permitting the tone arm to ride freely across the record.

At this time, the stud on the rear of the main slide (75) pushes the locking arm (54) which in turn, moves the locking lever (54) far enough to engage with the pin on the lower selector assembly (71) thereby locking the lower selector assembly in the out-of-cycle position.

As the main slide nears the end of its travel, the index pin on the bottom of the cam wheel (85) rides into the detent of the cam latch (75A), preventing the cam wheel (85) from engaging with the turntable hub until the next change cycle is started.

As soon as the last record has been dropped, the arm (1) drops below the shelf on the spindle assembly (23) and the pressure arm shaft contacts the shut-off lever on the automatic shut-off assembly (90). When the last record has finished playing, the change cycle starts again; however, this time, the rest position lever (57) is pivoted inward due to the action of the shut-off rod (91), which, in turn, was actuated by the shut-off spring (89) when the pressure arm shaft contacted the shut-off lever. As the rest position lever (57) pivots inward, the stud on the bottom moves against the cam surface on the reject lever (75B) and the tab at the opposite end moves into the path of the stud on the tone-arm actuating lever (69). As the tone arm swings outward from the turntable, the stud on the tone-arm actuating lever comes in contact with the tab on the rest-position lever (57), stopping the tone arm directly over the arm rest, thereby preventing the stud on the tone-arm actuating lever (69) from traveling far enough to unlock the lower selector assembly (71). At this time, the stud on the rest-position lever (57) has moved behind the cam surface on the reject lever (75B), and as the main slide (75) moves forward, the stud contacts the cam surface from the rear, forcing the reject lever (75B) toward the "On/Off" switch assembly (63). The lift shaft (58) now rides down the cam surface (point "B" on exploded view) on main slide (75), lowering the tone arm to the arm rest. Simultaneously, the reject lever (75B) contacts the stud on the "On-Off" switch assembly (63), which in turn, is moved far enough to shut the switch off.

Operation of 45 RPM Spindle Mechanism-

The center post (23) functions the same as before the 45 RPM spindle was placed on the changer. As the center post (23) is actuated, its ejector lever contacts the actuator (109) on the 45 RPM spindle and pushes it. This causes the separators (111) to move out which in turn, pull bolts (112) in. As the bolts recede, the separators (111), mounted above the bolts, move out and separate the lower record of a stack and support the remaining records, while the lower record drops to the turntable.

The ejector lever on center post (23) then moves to its rest position, allowing actuators (109) on the 45 RPM spindle to return with it by pressure applied by spring (114), causing separators (111) to move in and bolts (112) to move out. This action permits the bottom record of a stack to drop from the separators to the bolts.

PROPERTY OF
ADJUSTMENTS L. A. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

Needle Set-Down-

The set-down point of the needle is adjusted by means of the set-down adjustment screw (30 or 129). Turn this screw, adjusting the tone arm for the correct set-down point on a 10" record. When the correct set-down point is obtained for the 10" position, the 12" and 7" set down points will also be correct.

Tone Arm Height Adjustment-

The tone arm height is adjusted by means of the height adjustment screw (34 or 132). To raise the height of the tone arm, turn this screw counter-clockwise. To lower the tone arm, turn clockwise. The tone-arm height should be adjusted so the tone arm misses the underside of a record resting on the spindle shelf.

Needle Pressure-

The needle pressure should be between 8 and 12 grams. Adjustment may be made by loosening screw (133) and adjusting the pressure adjustment lever.

NOTE: Some models have no adjustment screw for needle pressure. The models that do not use the screw, have a counterbalance weight at the rear of the arm and this provides the proper pressure for the tone arm.

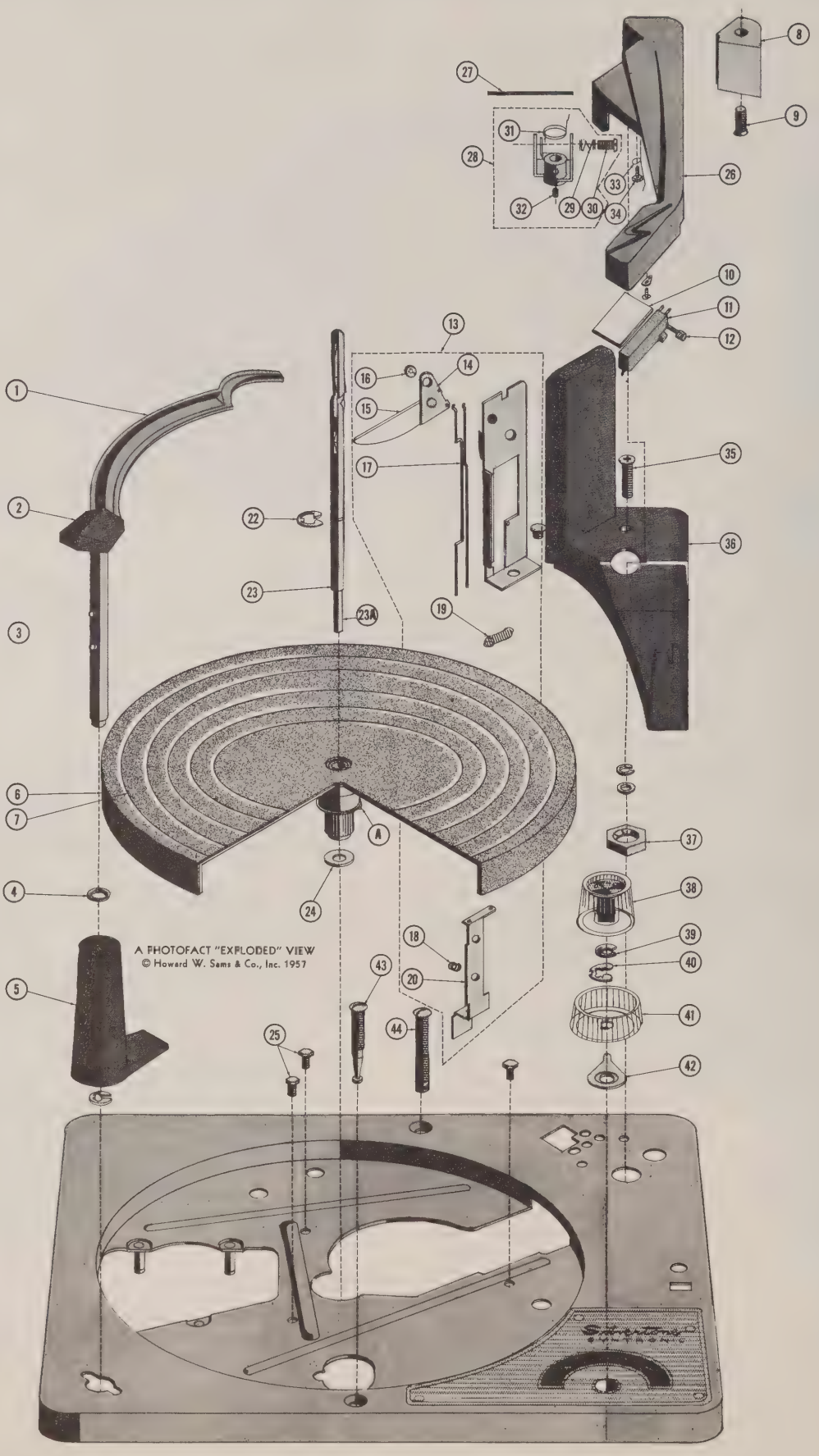


FIGURE 4A. EXPLODED VIEW OF PARTS ABOVE BASEPLATE.

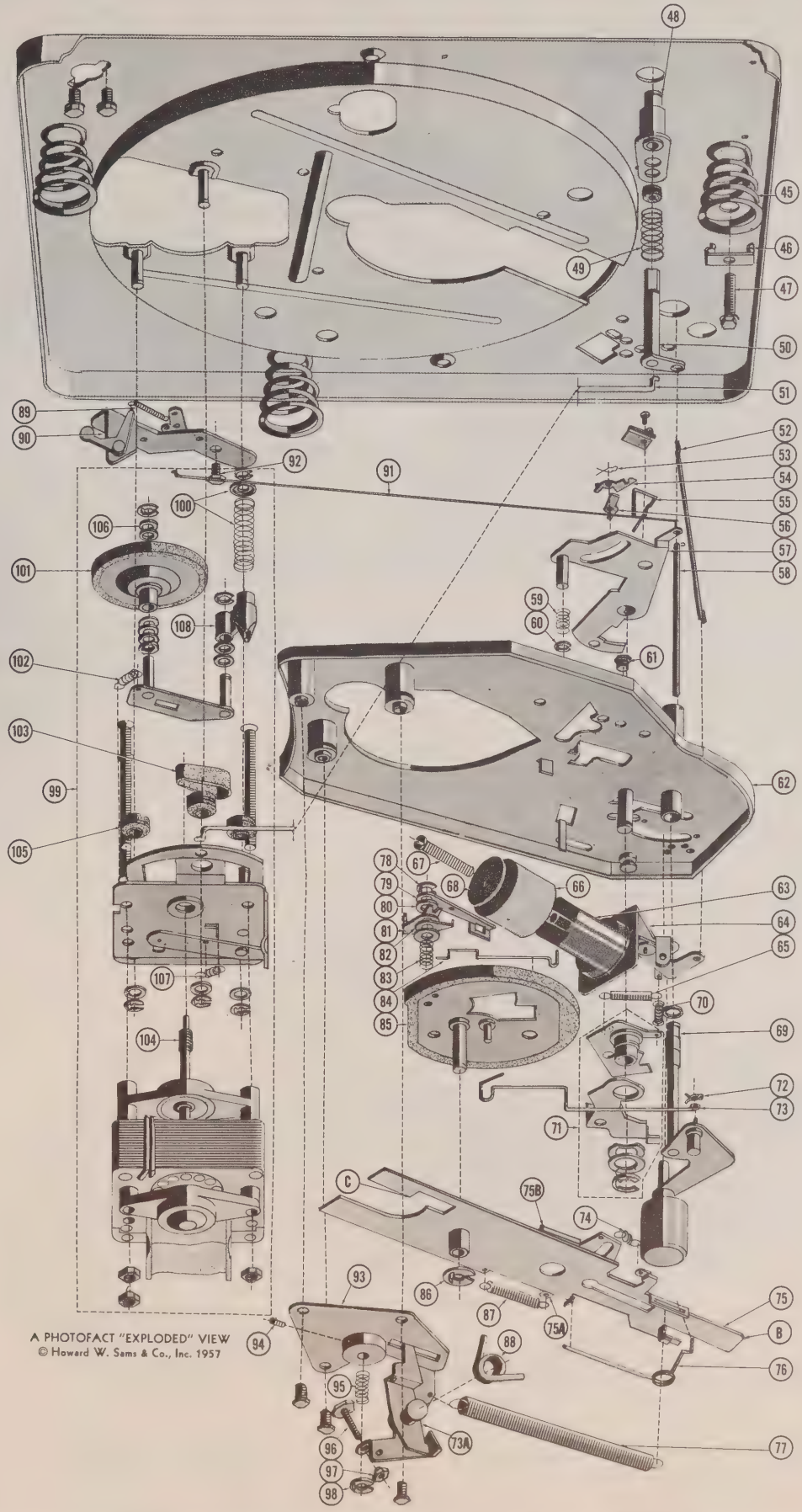


FIGURE 4B. EXPLODED VIEW OF PARTS BELOW BASEPLATE.

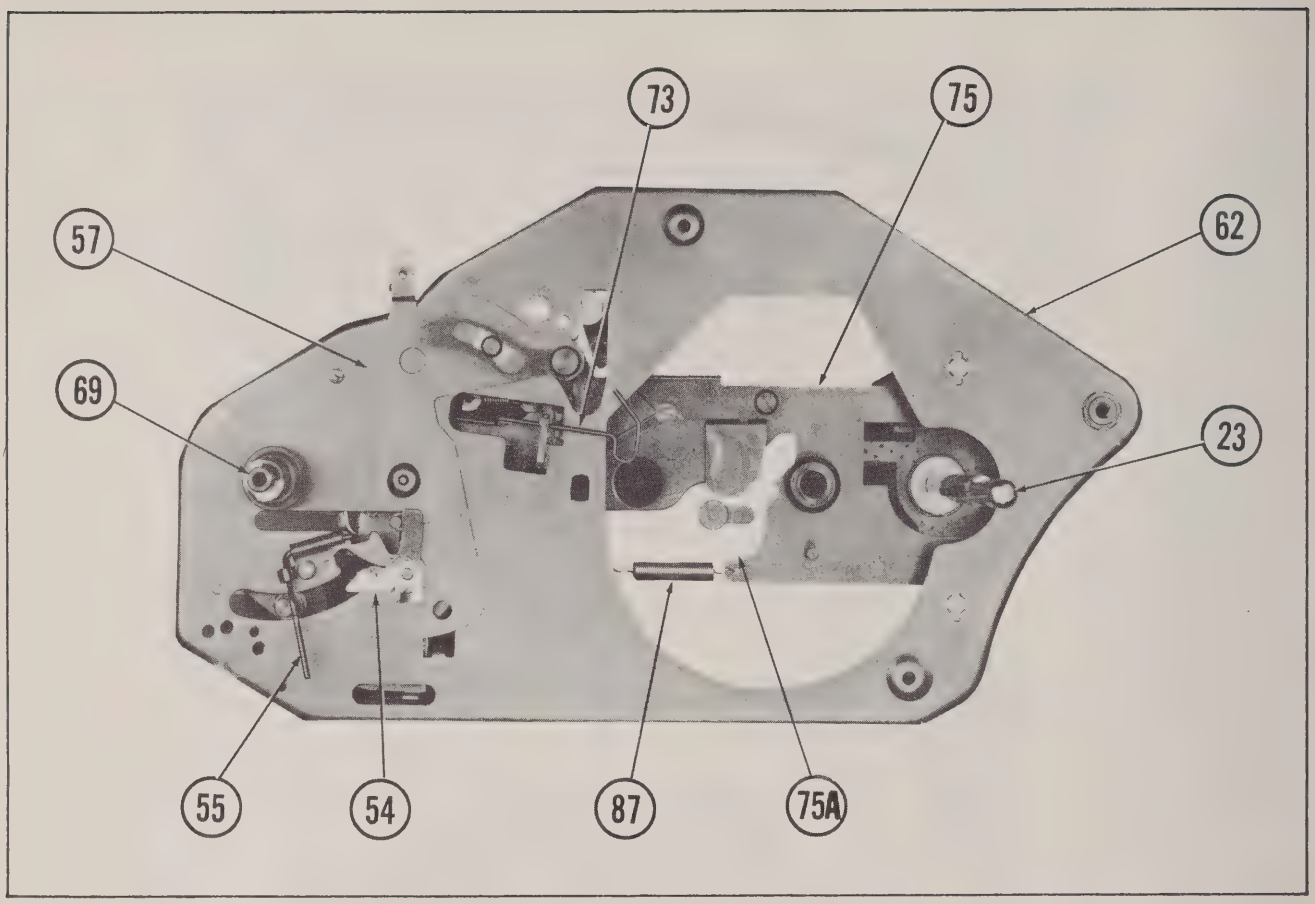


FIGURE 5

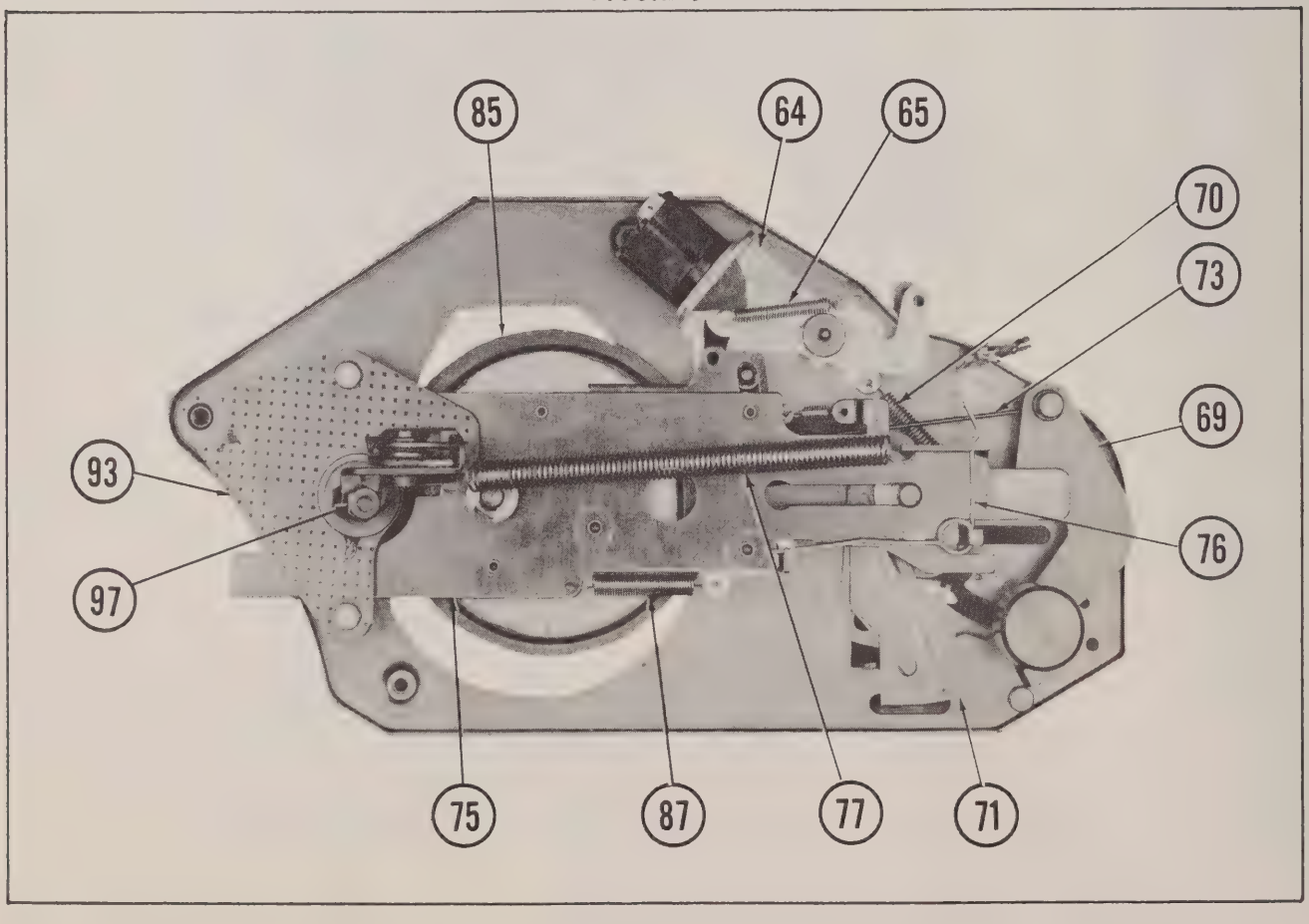
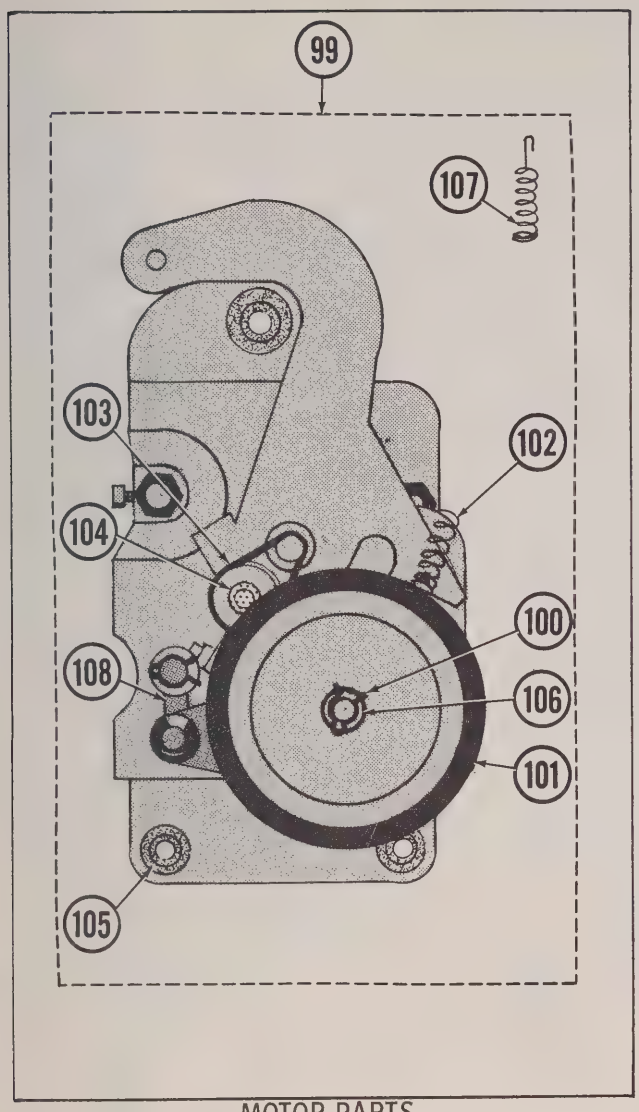
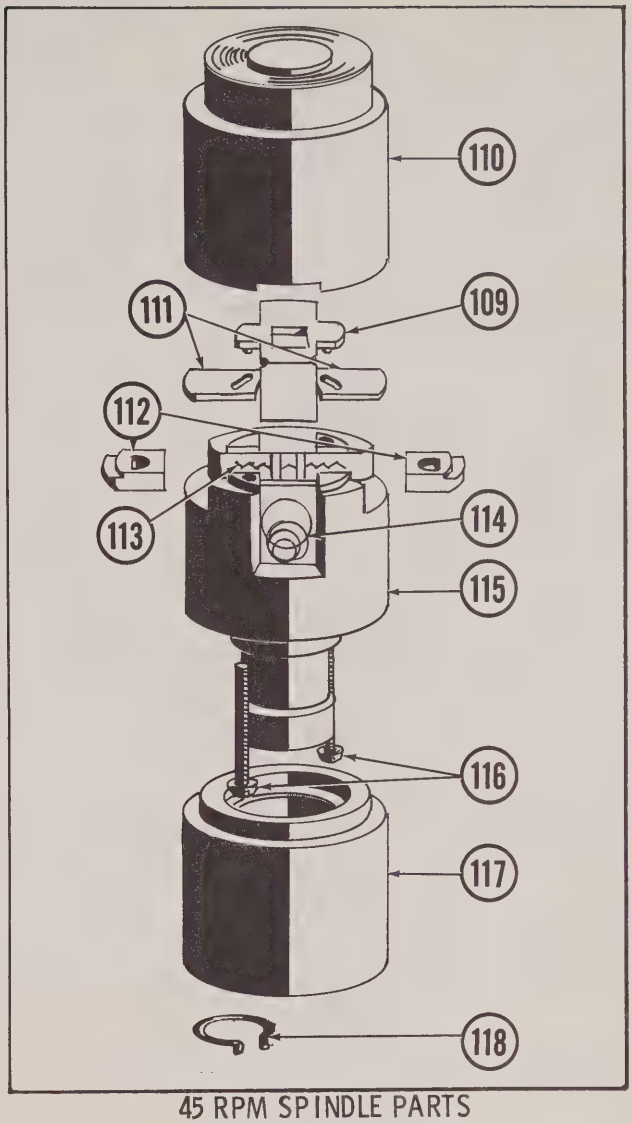


FIGURE 6



MOTOR PARTS



45 RPM SPINDLE PARTS

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description
1	012997-2	† Record Support Arm
	012997-1	* Record Support Arm
2	310435	† Record Support Arm Cap
	310480	* Record Support Arm Cap
3	460201	Groove Pin (2)
4	580222	Shock Washer (Not used in some versions)
5	300054-055	† Record Support Arm Housing
	300054-052	* Record Support Arm Housing
6	0130187	Turntable (Used in Chassis 567.40002 & 567.40102 only)
	013187	Turntable (Used in Chassis Nos. 567.40006, 567.40106, 567.41008, 9, 10, 13, 14, 15, 17, 18, 19, 567.41108, 9, 10, 13, 14, 15, 17, 18, 19 only)
	013065-402	Turntable Flocked (Used in Chassis Nos. 567.40003, 567.40103, 567.40105, 567.40108 only)
	013065-406	Turntable (Used in Chassis Nos. 567.40000, 567.40100)
	013057-2	Turntable Inc. Boot (Used in Chassis Nos. 567.40001, 567.40101, 567.41000, 567.41100, 567.41001, 567.41002, 567.41101, 567.41102)
	013594	Turntable & Bearing Ass'y. (Used in Chassis Nos. 567.41007, 567.41011, 567.41016 only)
7	320099-2	Turntable Boot (Black)
8	300062	† Counter Balance Weight
9	600292	† Screw, #4-40 x 3/4"
10	320081	† Cartridge Pad
11		Cartridge
12		Needle
13	013330	† Upper Selector Assembly (Inc. 14 thru 20)
14	100985	† Positioning Rod
15	011966	† Swivel & Selector Arm Ass'y.
16	460144	† "C" Washer
17	100817	† Lift Rod
18	420097	† Clutch Compression Spring
19	420096	† Return Spring
20	101059	† Friction Slide
	100984	Friction Slide (Used in Chassis Nos. 567.41000, 567.41100, 567.41001, 567.41002, 567.41107

MECHANICAL PARTS LIST (CON'T.)

Ref. No.	Part No.	Description
		567.41007 only).
21	310416	* Size Selector Knob
22	460114	"C" Washer (Turntable)
	460045	"C" Washer (Turntable used in Chassis Nos. 567.41007, 567.41016, 567.41011, 567.41107, 567.41116, 567.41111 only.)
23	011203	Spindle Assembly
	013588	Spindle Assembly (Used In Chassis Nos. 567.41107, 567.41116, 567.41111, 567.41007, 567.41016, 567.41011 only.)
24	580102	Thrust Washer
25	600173	#8-32 x 1/4" Screw
26	300059-054	† Tone Arm
	300066-054	Tone Arm (Used in Chassis Nos. 567.41107, 567.41116, 567.41111, 567.41007, 567.41016, 567.41016 only.)
	310422	Tone Arm (Used in Chassis Nos. 567.40106, 567.40109, 567.40006, 567.40009, 567.40001, 567,40101, 567.40101, 567.40002, 567.40102 only.)
	310417	Tone Arm (Used in Chassis Nos. 567.40003, 567.40000, 567.40100, 567.40100, 567.40103, 567.40108, 567.40105 only.)
27	200204	† Pivot Pin
	200404	Pivot Pin (Used in Chassis Nos. 567.41000, 567.41100, 567.41001, 567.41002, 567.41101, 567.41102 only).
	013551	Pivot Pin (Used in Chassis Nos. 567.41107, 567.41116, 567.41111, 567.41007, 567.41016, 567.41011 only.)
28	013102	† Tone Arm Pivot & Hinge Ass'y. (Inc. 29 thru 32)
29	420070	† Friction Spring
30	600165	† Screw, #6-40 x 1/4", Rd. Hd.
31	420069	† Tone Arm Spring
32	600213	† Set Screw, #8-32 x 3/16"
33	420200	† Tone Arm Height Spring
34	200346	† Screw, Adjust
35	600306	† Screw, #8-38 x 5/8"
	600265	* Screw, #8-32 x 7/8"
36	310432	† Selector Housing & Tone Arm Base
	310415	* Tone Arm Base
37	590007	Palnut, 1/2" - 20
38	012999	† Off-On-Reject Knob
	013015	* Reject Knob
39	580006	"C" Washer
40	460067	Spring Grip Washer
41	310433	† Speed Control Knob
	310421	* Speed Control Knob
42	101019	† Speed Indicator
43	600272	Mtg. Screw
44	600271	Mtg. Screw
45	420092	Mounting Spring
46	460183	† Speed Nut
47	600341	† Screw, #6-20 x 5/16"
48	011663	Speed Control Shaft & Lever
	011605	Speed Control Shaft & Lever (Used in Chassis Nos. 567.41109, 567.41110 567.41107, 567.41111, 567.41008, 567.41108, 567.41009, 567.41010, 567.41107, 567.41011, 567.40106, 567.40006, 567.40003, 567.40103 only).
49	420055	Anti-Rattle Spring
50	012893	On-Off Shaft & Lever
51	100738	Speed Control Rod (Long)
52	100455	Shut Off Rod (Short)
	101049	Short Off Rod (Short Used in Chassis Nos. 567.40100, 567.40001, 567.40101, 567.4002, 567.40102 only.)
53	420067	Retainer (Hairpin)
54	100842	Locking Lever
55	100451	† Lift Rod
56	100438	Locking Arm
57	100432	† Rest Position Lever
	011711	* Dentent Plate Assembly (Used in Place of Rest Position Lever in These Models).
58	013105	† Lift Shaft Ass'y., Inc. Retainer
59	420057	† Spring Safety (Index)
60	460144	† "C" Washer
61	600192	† Screw, #6-32 x 3/16"
62		Sub Base Plate
63	013239	† Off/On Switch Assembly
64		† Switching Mechanism
65	420058	† Spring On/Off Switch Ass'y.
66	330317	† Switch Cover
67	600169	† #4-24 x 3/8" Screw
68	580110	† Fibre Washer
69	013230	Actuating Lever
	013411	Actuating Lever (Used in Chassis Nos. 567.41114, 567.41115, 567.41014, 567.41015, 567.41118, 567.41119, 567.41018, 567.41019, 567.41109, 567.41110, 567.41116, 567.41111, 567.41107, 567.41009, 567.41010, 567.41016, 567.41011, 567.41007 only.)
70	420066	† Spring, Tone Arm Positioning
	420154	* Spring, Tone Arm Positioning
71	012109	Lower Selector Assembly
72	460063	Retainer (Hairpin)
73	100450	Rod, Trip Push (Long)
74	420065	Spring, Reject Lever
75	013557	† Main Slide
	101037	* Main Slide
76	420054	Spring, Actuating Lever Return
77	420063	Spring, Slide Return
78	460103	"C" Washer
79	100435	Pawl Locator
80	580096	Washer, Thrust (3)
81	100449	Pawl, Trip
82	100930	Arm, Clutch
83	420199	Spring, Clutch
84	100779	Rod, Trip Push (Short)
85	013559	Wheel, Cam
86	580006	"C" Washer
87	420064	Spring, Cam Latch

MECHANICAL PARTS LIST (CON'T.)

Ref. No.	Part No.	Description
88	420091	Spring, Push-Off Lever
89	420062	† Spring, Automatic Shut-Off
90	013244	† Shut - Off Ass'y. Automatic
91	100453	† Rod, Automatic Shut-Off
92	600172	† Screw, #6-32 x 1/4"
93	013638	Bracket, Spindle Mtg.
94	600213	Screw, #8-32 x 3/16" (2)
95	420099	Spring, Push-Off Shaft
96	200217	Screw, Adjustment
97	590002	Nut, Hex
98	580005	"C" Washer
		Parts For Motor Stamped 012982
99	012982	Motor Complete With Drive
100	460225	Hairpin Retainer
101	013240	Drive Wheel
102	420192	Spring, Drive Tension
103	320100	Belt
104	420194	Friction Spring
105	320102	Mounting Grommet (3)
106	580216	Fibre Washer
107	420196	Spring, Index Tension
108	810010	Link Follower
		Parts For Motor Stamped 012979
99	012979	Motor Complete With Drive
100	460226	Hairpin Retainer
101	013241	Drive Wheel
102	420193	Spring, Drive Tension
103	320101	Belt
104	420195	Friction Spring
105	320103	Mounting Grommet
106	580217	Fibre Washer
107	420197	Spring, Index Tension
108	810009	Link Follower
		Parts For Motor Stamped 59-72
99	59-72	Motor, Complete With Drive
100	460225	Hairpin Retainer
101	013240	Drive Wheel
102	420192	Spring, Drive Tension
103	320101	Belt
104	420195	Friction Spring
105	320103	Mounting Grommet
106	580217	Fibre Washer
107	420197	Spring, Index Tension
108	810009	Link Follower
		Parts For Motor Stamped 013680
99	013680	Motor, Complete With Drive
100	460226	Hairpin Retainer
101	013241	Drive Wheel
102	420193	Spring, Drive Tension
103	320101	Belt
104	420195	Friction Spring
105	320103	Mounting Grommets
106	580217	Fibre Washer
107	420197	Spring, Index Tension
108	22-30-4	Link Follower
109	011198	Actuator
110	310376	Spindle Nose
111	100514	Separator (2)
112	310090	Separator Bolt (2)
113	420004	Separator Spring
114	420089	Actuator Spring
115	300031-054	Spindle Housing
116	600195	#4-24 by 1-1/8 Phillips Rd. H. #25
117	300028	Record Locator
118	460088	Retainer Ring
119	310422	Tone Arm (Used in Chassis Nos. 567.40009, 567.40109, 567.40106, 567.40006, 567.40001, 567.40101, 567.40002, 567.40102 only.)

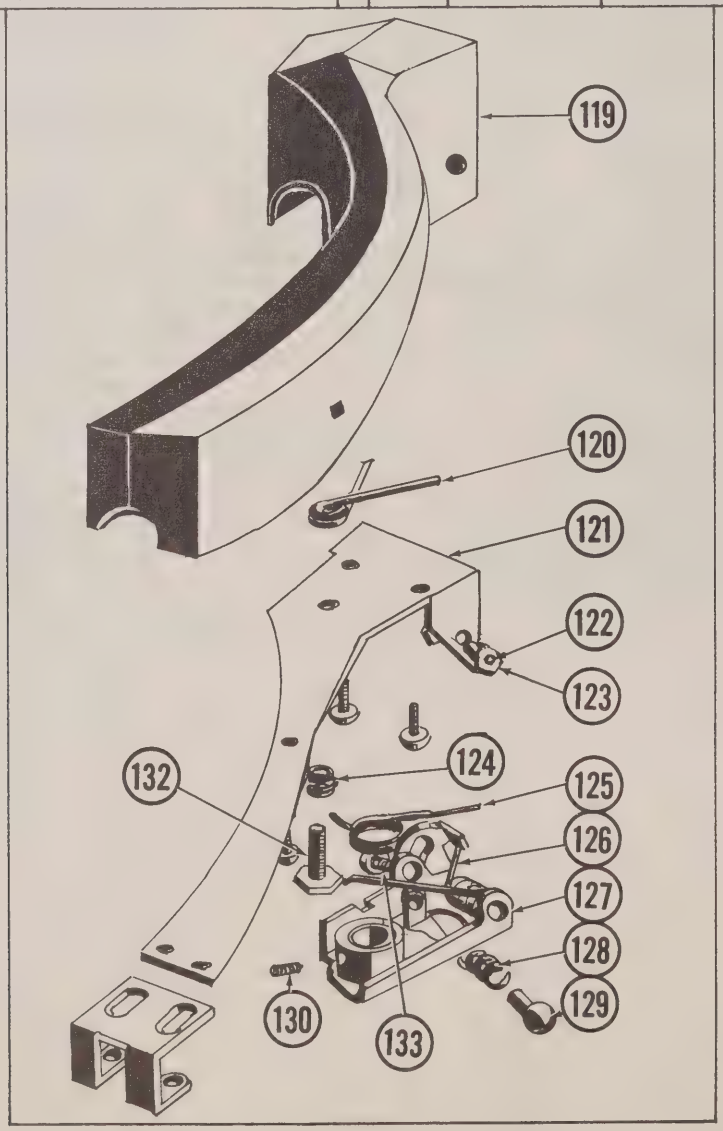
Parts marked with † are units that have automatic shut-off and upper selector assembly (13), they are as follows:
567.41000, 1, 2, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19,
567.41100, 1, 2, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19

Parts marked with a * are units that do not have upper selector ass'y. (13), they are as follows:
567.40000, 1, 2, 3, 6, 9,
567.40100, 1, 2, 3, 5, 6, 8, 9,

Parts not marked are used in both models unless designated otherwise.

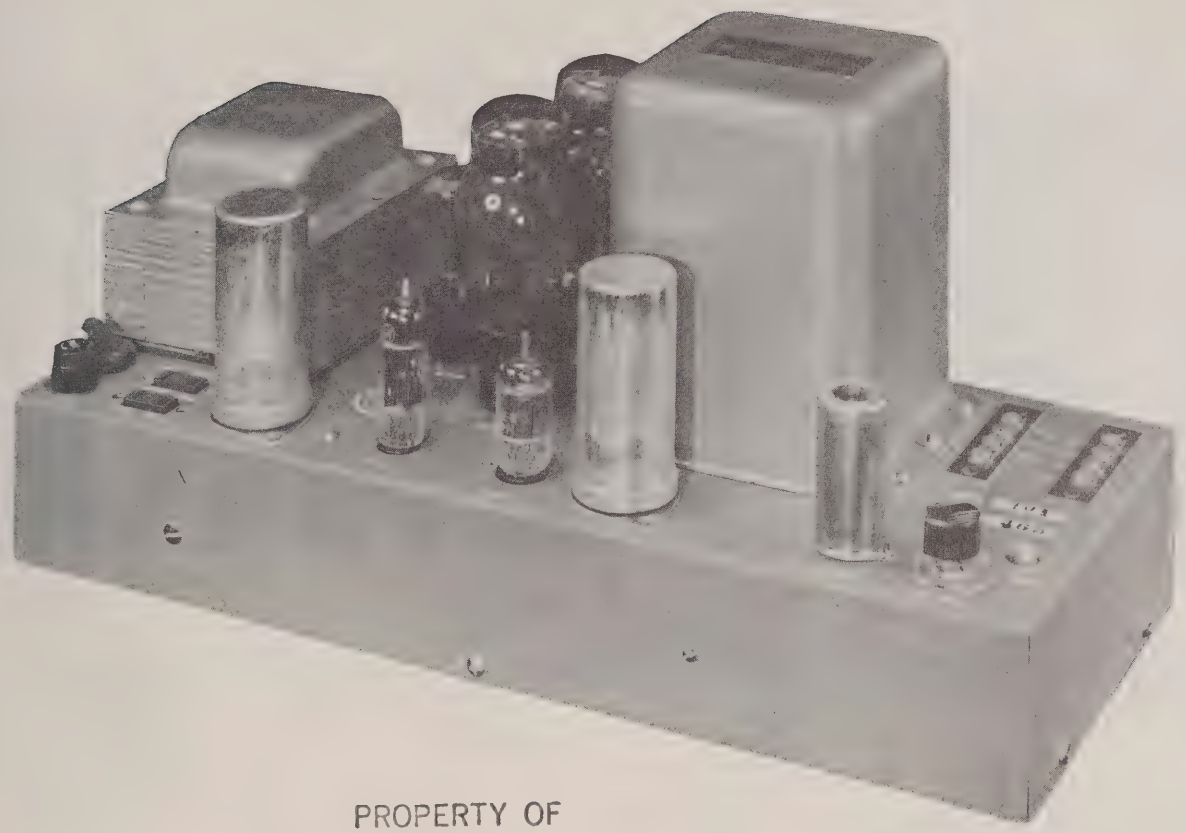
MECHANICAL PARTS LIST (CON'T.)

Ref. No.	Part No.	Description
	310417	Tone Arm (Used in Chassis Nos. 567.40003, 567.40000, 567.40100, 567.40103, 567.40108, 567,40105 only.)
120	420088	Spring Adj. Screw
121	100475	Bracket, Tone Arm Support
122	600163	Pivot Screw
123	590033	Hex Nut #4-40
124	420085	Spring
125	420069	Spring, Tone Arm
126	420071	Spring, Tone Arm Counter Balance
127	013651	Tone Arm Pivot & Hinge Ass'y. (Used in Chassis Nos. 567.40106, 567.40109, 567.40009, 567.40006, 567.40003, 567.40103, 567.40108, 567.40105
	010903	Tone Arm Pivot & Hinge Ass'y. (Used in Chassis Nos. 567.40000, 567.40100, 567.40001, 567.40101, 567.40002, 567.40102 only.)
128	420070	Spring
129	600165	Screw, Set Down Adjustment
130	600213	Set Screw #8-32 x 3/16"
131	100516	Bracket, Cartridge Mtg. (Used in Chassis Nos. 567.40106, 567.40109, 567.40009, 567.40006, 567.40001, 567.40101, 567.40002, 567.40102 only.)
	011381	Bracket, Cartridge Mtg. (Used in Chassis Nos. 567.40103, 567.40108, 567.40105, 567.40000, 567.40100, 567.40003 only.)
132	200301	Screw, Height Adj.
133	600291	Screw, Pressure Adj. #4-40 x 1/8" (Used in Chassis Nos. 567.40106, 567.40109, 567.40009, 567.40006, 567.40003, 567.40000, 567.40100, 567.40103, 567.40108, 567.40105 only.)
	600164	Screw Pressure Adj. #4-40 x 3/32" (Used in Chassis Nos. 567.40002, 567.40102, 567.40001, 567.40101 only.)



TONE ARM PARTS

STROMBERG-CARLSON
MODEL AP428



STROMBERG-CARLSON
MODEL AP428

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO

TRADE NAME	Stromberg-Carlson Model AP-428
MANUFACTURER	Stromberg-Carlson Co., Sound Div., 1225 Clifford Ave., Rochester 21, N.Y.
TYPE SET	AC Operated Audio Amplifier
TUBES (Six)	Types 12AU7 AF Amp.-Phase Inv., 12AU7 Driver, (2) 6L6G Output, 5Y3GT Rectifier, 6X4 Rectifier
POWER SUPPLY	105-125 Volts AC-50/60 Cycles RATING 1 Amp. @ 117 Volts AC (105 Watts)

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

STROMBERG-CARLSON
MODEL AP-428

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	AF Amp. -Phase Inv.	12AU7	
V2	Driver	12AU7	
V3	Output	6L6G	
V4	Output	6L6G	
V5	Rectifier	5Y3GT	
V6	Rectifier	6X4	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Stromberg-Carlson PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SANGAMO PART No.	SPRAGUE PART No.
C1A	▲30	500	46320	AFH2-72	B0530	FP284	TMT-46	D-275	TVL-2937
B	■30	500							
C2A	▲40	450	35590	AFH4-85-25	C0330	FP377.2		Q-310	TVL-4705.8
B	■30	350	(Note 1)		BR505	TC64		MT-4504	
C	50	50							
D	▲15	300							

Note 1. C2D is not used.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA Stromberg-Carlson PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C3	.22	400		P488N-22		CUB4P22		GEM-4022	4TM-P22	
C4	330			SI 330	D6-331	LT6T33	GP-330	UC-5333	5GA-T33	
C5	330			SI 330	D6-331	LT6T33	GP-330	UC-5333	5GA-T33	
C6	220			SI 220	D6-221	LT6T22	GP-220	UC-5322	5GA-T22	
C7	.5	400		P488N-5		CUB4P5		GEM-405	4TM-P5	
C8	.5	400		P488N-5		CUB4P5		GEM-405	4TM-P5	
C9	.1	400		P488N-1	DF-104	CUB4P1		GEM-401	4TM-P1	
C10	.1	400		P488N-1	DF-104	CUB4P1		GEM-401	4TM-P1	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Stromberg-Carlson PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	100K	1/2	145620	B-41	A47-100K-Z	Q13-128	U39	Volume
B	Shaft			Not req.	FS-3	Not req.	Not req.	

RESISTORS

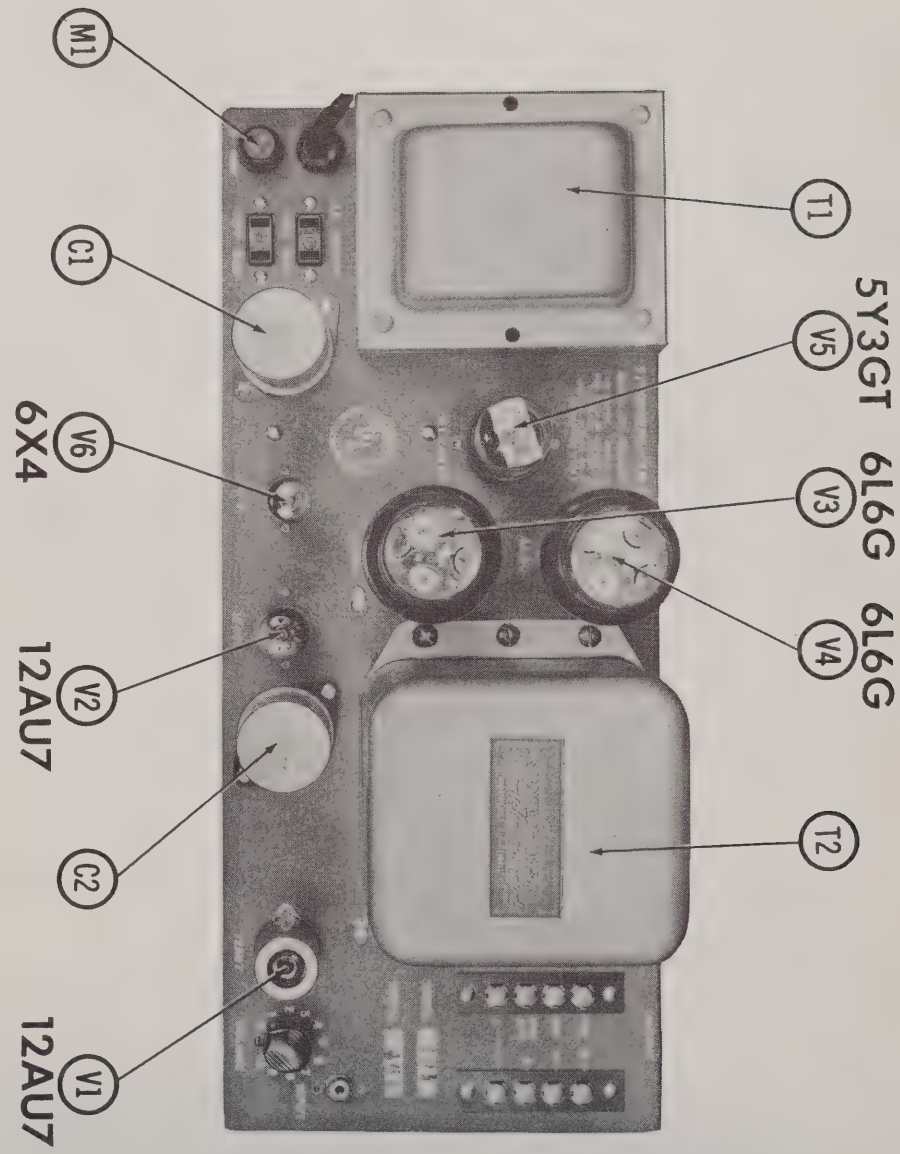
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA Stromberg-Carlson PART No.	IRC PART No.	NOTES
R2	270K			BTS-270K	
R3	68K			BTS-68K	
R4	47K			BTS-47K	
R5	3300Ω			BTS-3300	
R6	22K			BTS-22K	
R7	47K			BTS-47K	
R8	47K			BTS-47K	
R9	1Meg			BTS-1Meg	
R10	1Meg			BTS-1Meg	
R11	47K			BTS-47K	
R12	47K			BTS-47K	
R13	1200Ω 5%			BTS-1200 5%	
R14	1200Ω 5%			BTS-1200 5%	

ITEM No.	RATING OHMS	RATING WATT	REPLACEMENT DATA Stromberg-Carlson PART No.	IRC PART No.	NOTES
R15	470K			BTS-470K	
R16	470K			BTS-470K	
R17	250Ω	10		PW10-250	
R18	22K			BTS-22K	
R19	680Ω			BTS-680	
R20	22K			BTS-22K	
R21	47K			BTS-47K	
R22	47K	2		BTB-47K	
R23	47K	2		BTB-47K	
R24	100K	2		BTB-100K	
R25	100K	2		BTB-100K	
R26	125	10		1 3/4 A-125	Note 1

Note 1. Not used in some versions

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA					
	PRI.	SEC. 1	SEC. 2	SEC. 3	Stromberg-Carlson PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC @ 1A	800VCT @ .093A Tap @ 510VCT @ .014A	5VAC @ 2A	6.3VAC @ .6A SEC. 4 6.3VCT @ 2A	161791					

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA						NOTES
	PRI.	SEC.	Stromberg-Carlson PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	4500Ω CT Turns Ratio PRI: SEC. 2 9.5: 1	600Ω Taps @ 150Ω, 16Ω, 8Ω, & 4Ω	161335						

FILTER CHOKE

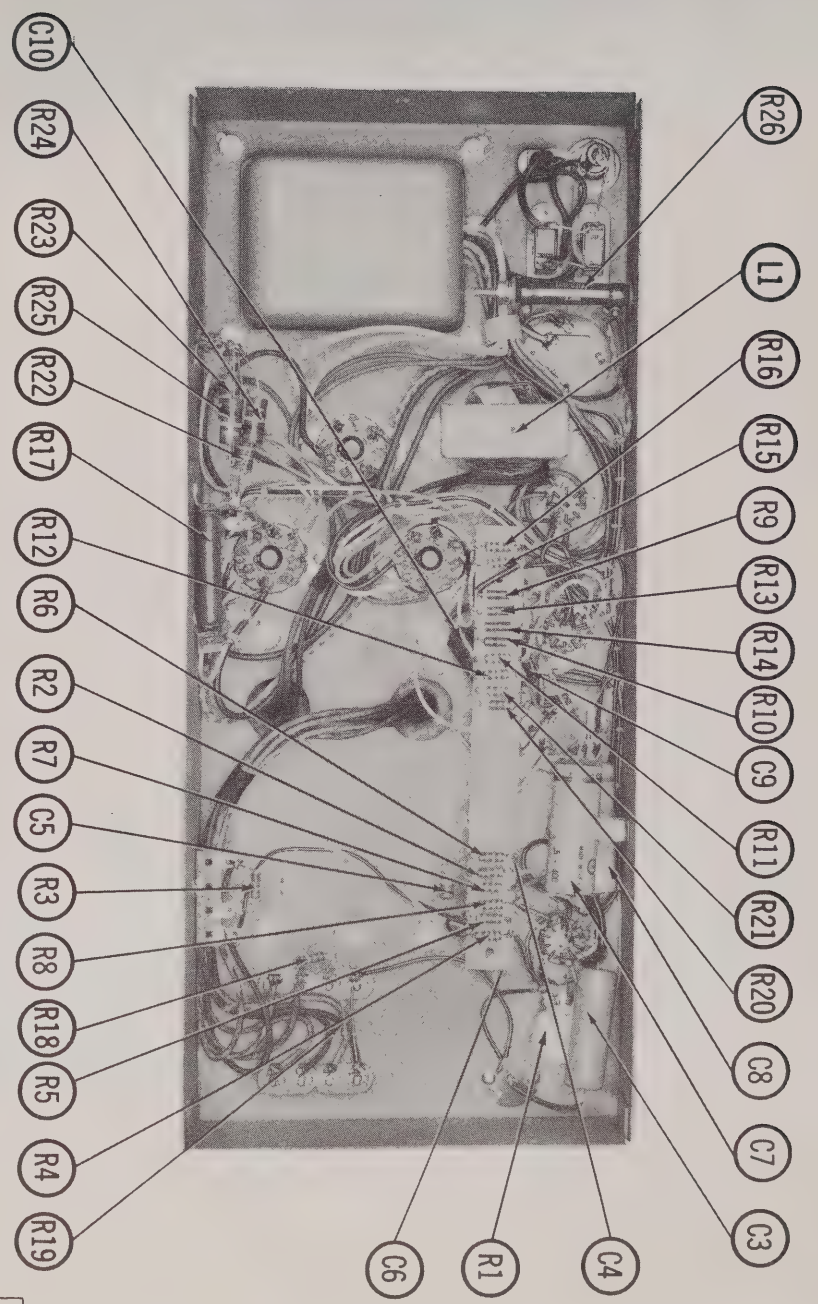
ITEM No.	RATINGS			REPLACEMENT DATA					
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	Stromberg-Carlson PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L1	.014A	480Ω	15 Hy.	114186	C5014 ①	C-2976 ①	C-1708 ①	20C52 ①	C-3X

① Drill new mounting hole.

FUSES

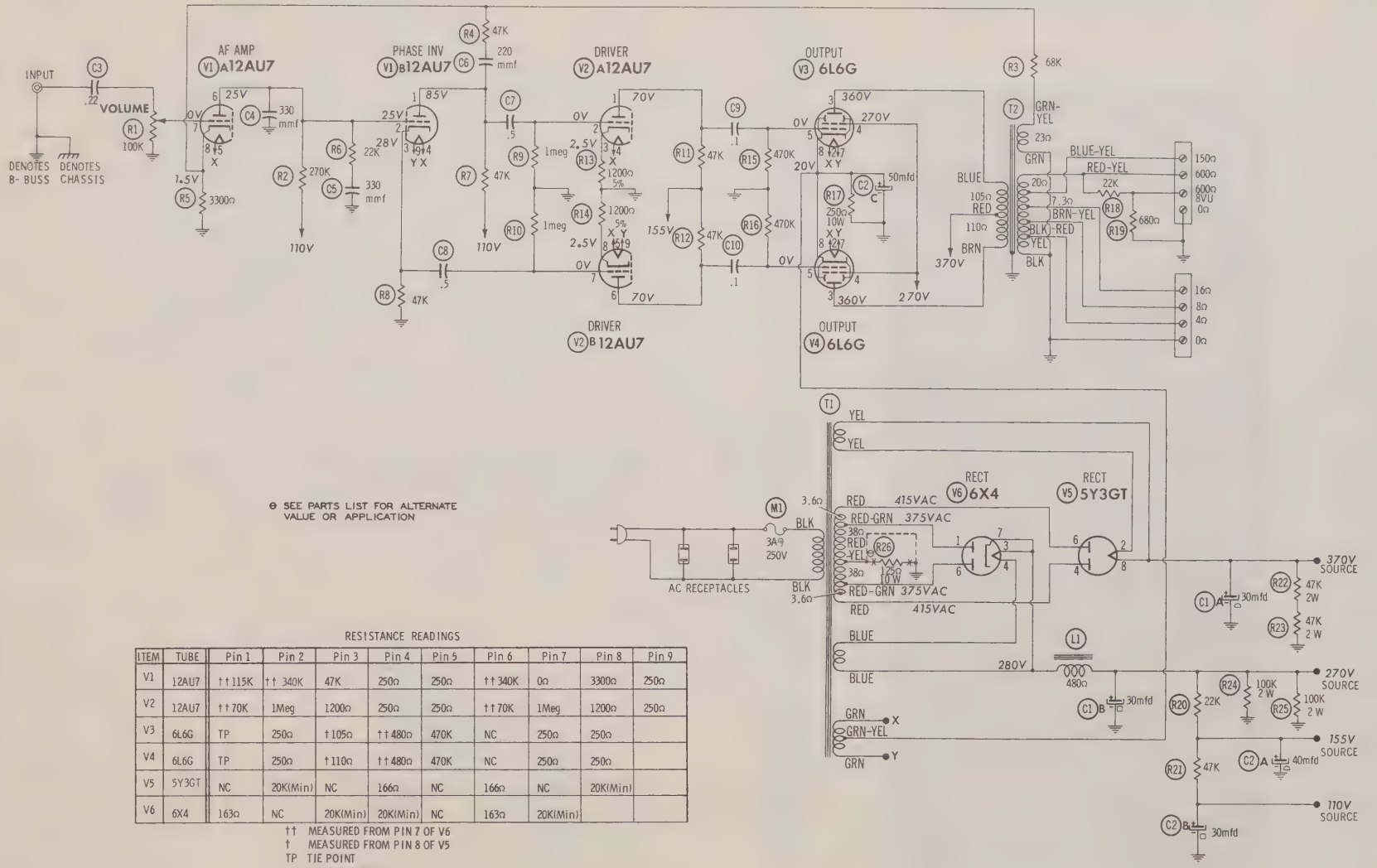
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			Stromberg-Carlson PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M1	3AG	3A 250V			312003. (3AG3A)	342001	AGC3	HKP

CHASSIS—BOTTOM VIEW



STROMBERG-CARLSON MODEL AP-428

STROMBERG-CARLSON MODEL AP-428



⊖ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AU7	††115K	†† 340K	47K	250Ω	250Ω	†† 340K	0Ω	3300Ω	250Ω
V2	12AU7	††70K	1Meg	1200Ω	250Ω	250Ω	††70K	1Meg	1200Ω	250Ω
V3	6L6G	TP	250Ω	†105Ω	†† 480Ω	470K	NC	250Ω	250Ω	
V4	6L6G	TP	250Ω	†110Ω	†† 480Ω	470K	NC	250Ω	250Ω	
V5	5Y3GT	NC	20K(Min)	NC	166Ω	NC	166Ω	NC	20K(Min)	
V6	6X4	163Ω	NC	20K(Min)	20K(Min)	NC	163Ω	20K(Min)		

†† MEASURED FROM PIN 7 OF V6
† MEASURED FROM PIN 8 OF V5
TP TIE POINT
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

PHOTOFACT* Folder

*TRADE MARK

RETMA MEMBER

TRUETONE MODELS 2D1730A, B, C, 2D1731A, 2D1732A

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MODEL 2D1730C

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

TRUETONE MODELS
2D1730A, B, C, 2D1731A, 2D1732A

TRADE NAME	Truetone Models 2D1730A, B, C, 2D1731A, 2D1732A
SUPPLIER	Western Auto Supply Co., 2107 Grand Avenue, Kansas City, Mo.
TYPE SET	Television Receiver
TUBES	Sixteen
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING 155 Watts, 1.35 Amp. @ 117 Volts AC
TUNING RANGE	Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound 41.25MC (Intercarrier)

INDEX

Alignment Instructions 6, 7
Disassembly Instructions 1
Horizontal Sweep Circuit Adjustments 8
Parts List and Descriptions 12, 13, 14
Photographs
- Cabinet-Rear View 8
- Capacitor & Alignment Identification 4, 9
- Chassis-Top View 11
- RF Tuner 14
- Resistor & Inductor Identification 15, 16

Resistance Measurements 10
Servicing in the Field 1
Schematic (Alternate Tuners) 5, 8
Schematic (TV) 2
Tube Failure Check Chart 3
Tube Placement Chart (Bottom View) 10
Tube Placement Chart (Top View) 3

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

RETMA MEMBER

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL

1. Remove 4 wood screws and the rear cover.
2. Remove 2 speaker leads.
3. Remove the antenna terminal board by loosening 2 wood screws.
4. Remove 2 metal screws holding the top of the chassis to the rear of the cabinet.
5. Remove 2 metal screws from inside the cabinet, holding the bottom of the chassis to 2 lower brackets.
6. Remove chassis by sliding out from the front of the cabinet.
7. Remove 4 speaker nuts and the speaker.

CAUTION NOTE

ONE SIDE OF AC LINE CONNECTED TO CHASSIS
Care should be exercised when connecting test equipment or physically contacting the chassis.

PROPERTY OF
MODEL 2D1730C
L. F. BLANKENSHIP.
3924 MEADE ST.
DENVER, COLORADO

SERVICING IN THE FIELD

TUNER OSCILLATOR ADJUSTMENTS

Touch-up adjustment of the VHF oscillator is possible by removing the channel selector and fine tuning knobs. Set the fine tuning at the center of its range. The adjustments are accessible, one at a time, as the channel selector is rotated. Adjust for best picture and sound.

PICTURE TUBE SAFETY GLASS CLEANING

1. Remove the name plate by pulling straight out.
2. Remove 2 metal screws and the retainer bracket.
3. Remove the safety glass.

FOCUS

Adjust the ion trap for the best focus consistent with maximum brightness.

HORIZONTAL OSCILLATOR FIELD ADJUSTMENT

Set the horizontal hold control to the center of its range and adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

SOUND IF DETECTOR BUZZ ADJUSTMENT

To eliminate audio detector buzz, adjust the buzz control for MINIMUM buzz and maximum sound. (For location see tube placement chart).

FUSES

A thermal circuit breaker is used for LV power supply protection and may be closed by means of a reset button. (For location, see tube placement chart).

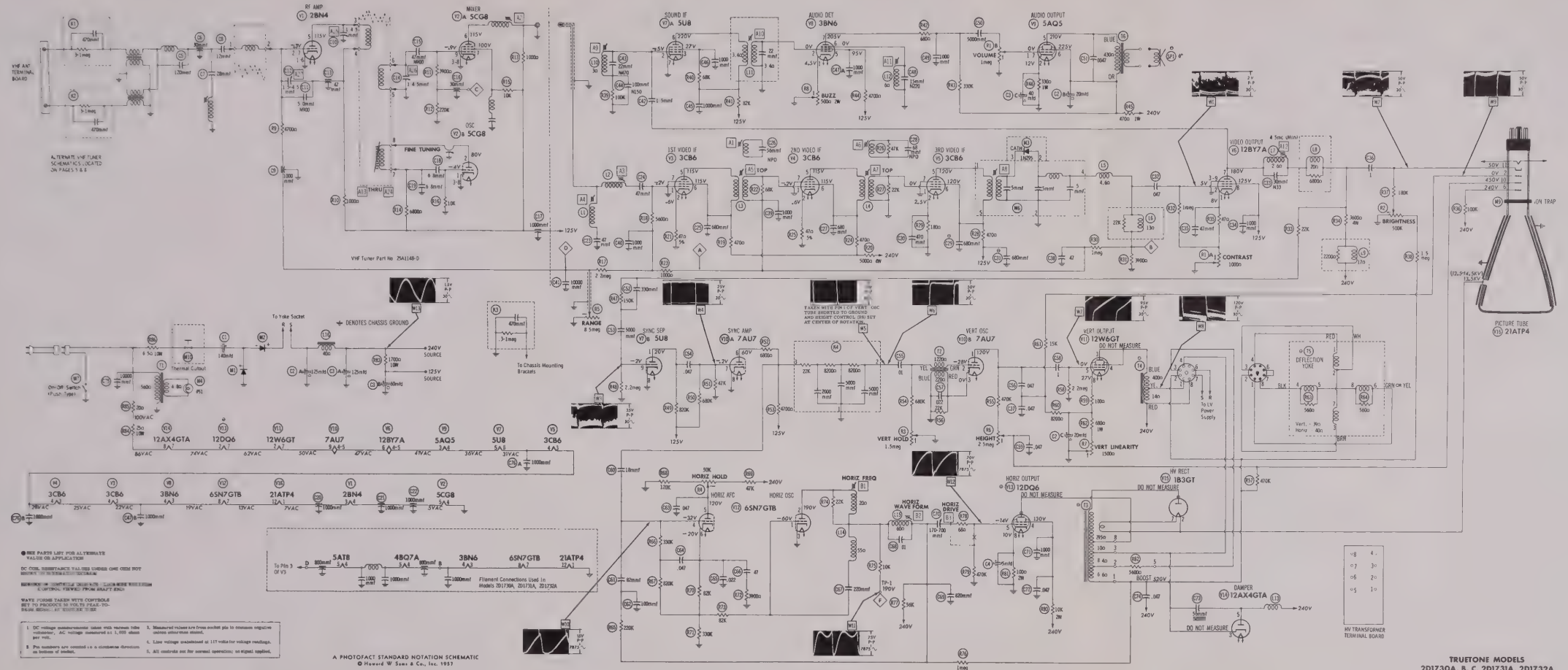
CENTERING

Centering is accomplished mechanically by adjusting two magnetic rings around the neck of the picture tube. Rotate the two rings around the neck of the tube until the picture is properly centered.

TRUETONE MODELS
2D1730A, B, C, 2D1731A, 2D1732A

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

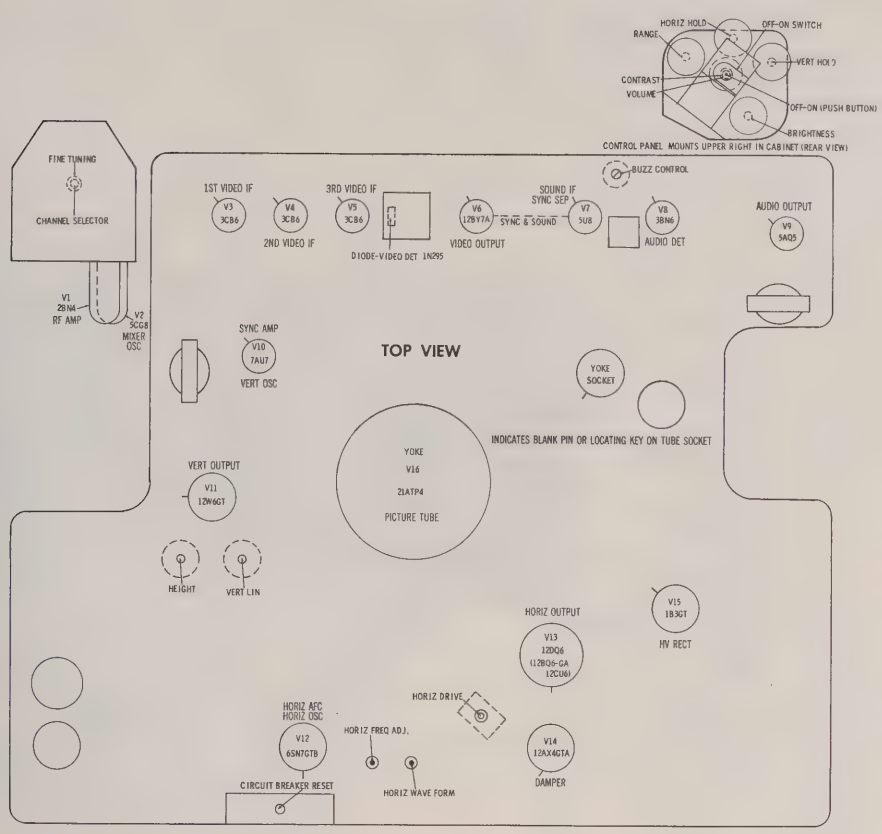
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1957 by Howard W. Sams & Co., Inc., Indianapolis 5, Indiana, U. S. of America. Copyright under international Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

TUBE PLACEMENT CHART

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce the indicated symptoms. Refer to tube placement chart for location and type of tube.

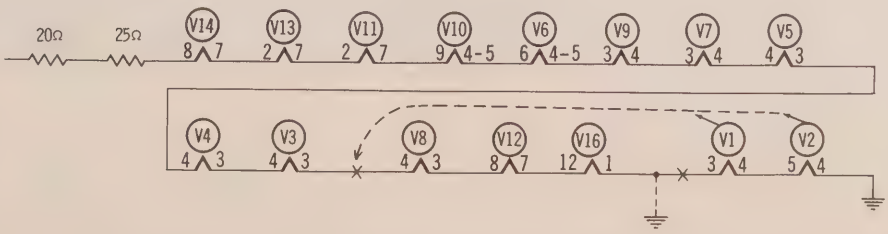
POWER SUPPLY FAILURE
No raster, no sound - Circuit Breaker (M10), Rectifier (M1, M2)

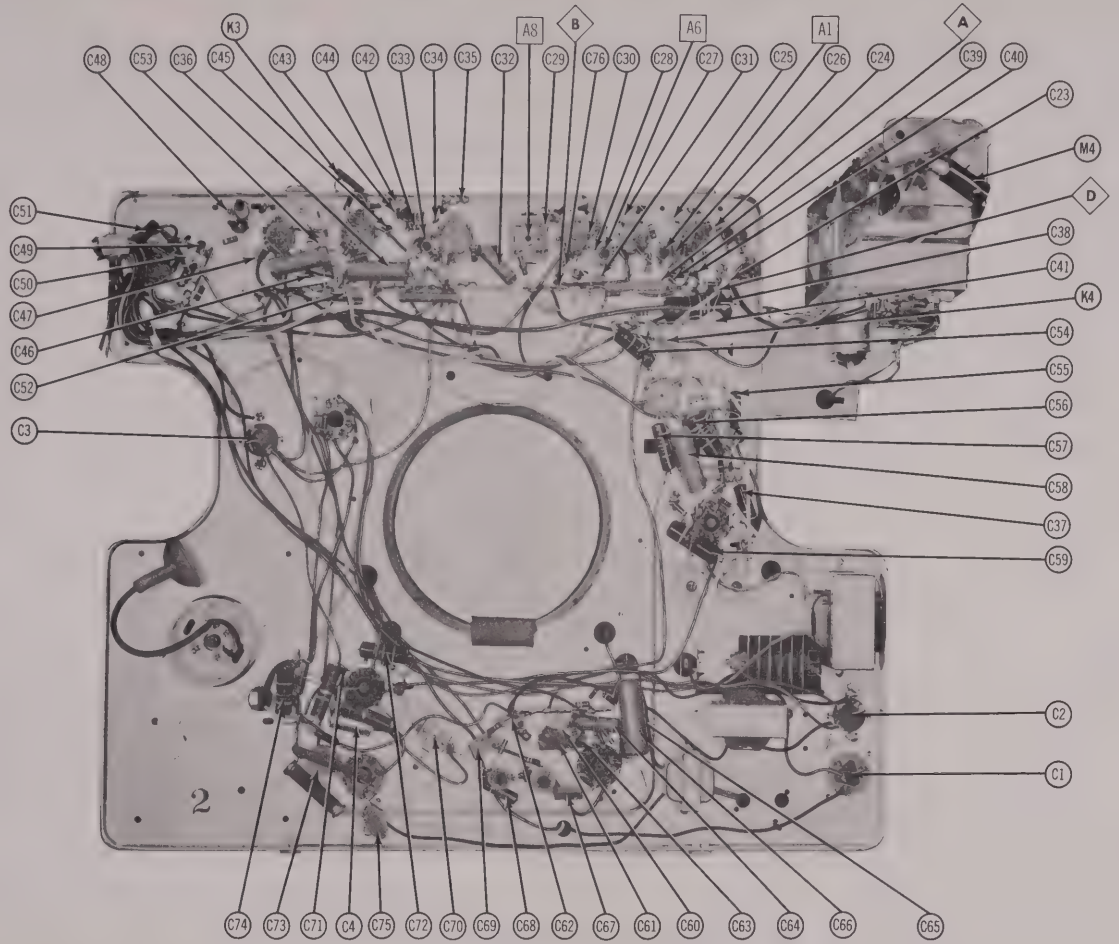
LOSS OF PICTURE OR SOUND
No pic, no sound, has raster - V3, V4, V5, Diode (M3), V6
No pic, no sound, has snow - V1, V2
No pic, has sound, has raster - V8, V16
Has pic, no sound - V7, V8, V9

SYNC FAILURE
No vert. sync - V7, V10
No horiz. sync - V7, V10, V12
No vert. or horiz. sync - V7, V10

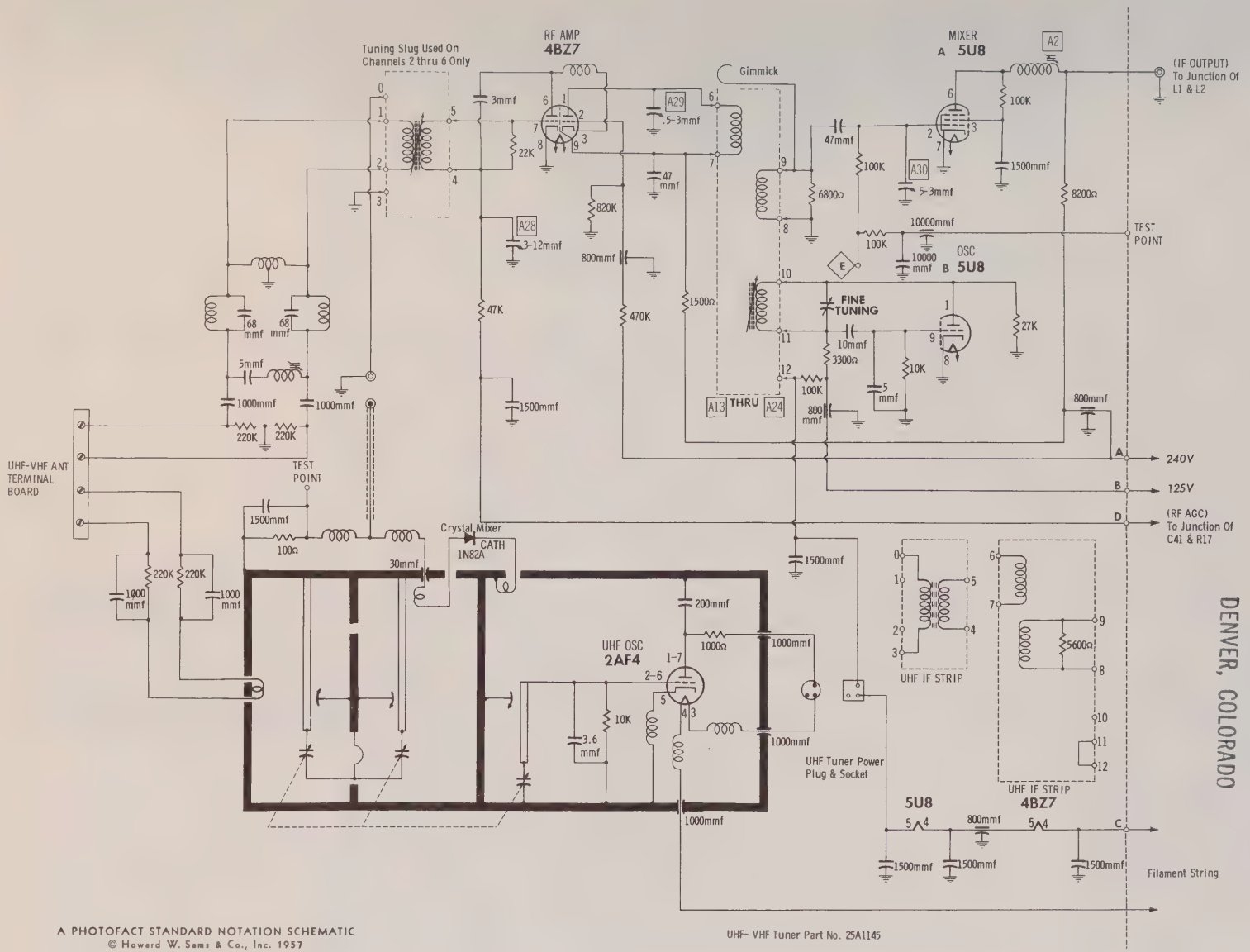
SWEEP FAILURE
No raster, has sound - V12, V13, V14, V15, V16
No vertical deflection - V10, V11
Poor vert. linearity or foldover - V10, V11
Poor horiz. linearity or foldover - V12, V13, V14
Narrow picture - V12, V13, V14, M1, M2
Vert. off freq. - V10
Horiz. off freq. - V12

This receiver employs tubes used in a series filament network, an open filament in any tube in the series will cause the set to be inoperative.(See circuit below).





CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

UHF- VHF Tuner Part No. 25A1145

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE St.
DENVER, COLORADO

ALTERNATE TUNER SCHEMATIC

TRUETONE MODELS 2D1730A, B, C, 2D1731A, 2D1732A

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

USE AN ISOLATION TRANSFORMER TO PROTECT THE TEST EQUIPMENT.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.

VIDEO IF ALIGNMENT

Connect the negative lead of a 1.5 volts bias supply to point Ⓐ. For steps 3 thru 7 increase bias at point Ⓐ to 4.5 volts.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer-oscillator tube (V2). Low side to chassis	44.5MC (10MC Swp)	47.25MC	Any non-interfering channel	Vert. Amp. thru detector (Fig. 1) to pin 5 (plate) of 3CB6 (V3). Low side to chassis.	A1	Adjust to place marker in trap notch as in Fig. 2.
2.	"	"	"	41.25MC 45.75MC	"	"	A2, A3, A4	Adjust for response curve similar to Fig. 2 with markers as indicated. A2 and A3 controls shape of curve top and positions 45.75MC marker. A3 positions 41.25MC marker. Both markers must be correctly positioned before proceeding with alignment.
3.	"	"	"	42.8MC	"	Vert. Amp. thru 47K to point Ⓑ. Low side to chassis.	A5	Adjust sweep output for 2 volts at point Ⓑ. Adjust for maximum amplitude at marker.
4.	"	"	"	41.25MC	"	"	A6	Adjust for MINIMUM amplitude at marker.
5.	"	"	"	45.3MC	"	"	A7	Adjust for maximum amplitude at marker.
6.	"	"	"	44.0MC	"	"	A8	"
7.	"	"	"	41.25MC 42.4MC 42.8MC 44.0MC 44.5MC 45.3MC 45.75MC 47.25MC	"	"		Check for response curve similar to Fig. 3 with markers as indicated. If necessary SLIGHTLY retouch A1, and A4 thru A8 for desired reponse. DO NOT retouch A2 or A3.

SOUND IF ALIGNMENT

Turn the set on and tune in a TV station. Reduce the signal strength at the antenna terminals by using an attenuator or similar device until a "Hiss" is heard in the sound.
Adjust A9, A10, A11 and buzz control (R8) for maximum undistorted sound and MINIMUM buzz.
If the hiss disappears during alignment, reduce signal strength still further.

4.5MC TRAP ALIGNMENT

Use 0-10 volt scale on VTVM.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.001MFD	High side to pin 2 (grid) of 12BY7A (V6). Low side to chassis.	4.5MC (Unmod)	Any non-interfering	DC probe to pin 11 (cathode) of picture tube. Common to chassis.	A12	Adjust for MINIMUM deflection.

VHF OSCILLATOR ALIGNMENT

Connect the negative lead of 3 volt bias supply to point Ⓓ. Positive to chassis.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the center of its range.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC Swp)	211.25MC 215.75MC	13	Vert. Amp. thru 47K to point Ⓑ. Low side to chassis.	A13	Adjust to place sound marker in trap notch as in Fig. 4. Video marker should fall at 50%.
			207MC (10MC Swp)	205.25MC 209.75MC	12		A14	
			201MC (10MC Swp)	199.25MC 203.75MC	11		A15	
			195MC (10MC Swp)	193.25MC 197.75MC	10		A16	
			189MC (10MC Swp)	187.25MC 191.75MC	9		A17	
			183MC (10MC Swp)	181.25MC 185.75MC	8		A18	
			177MC (10MC Swp)	175.25MC 179.75MC	7		A19	
			85MC (10MC Swp)	83.25MC 87.75MC	8		A20	
			79MC (10MC Swp)	77.25MC 81.75MC	5		A21	
			69MC (10MC Swp)	67.25MC 71.75MC	4		A22	
			63MC (10MC Swp)	61.25MC 65.75MC	3		A23	
			57MC (10MC Swp)	55.25MC 59.75MC	2		A24	

ALIGNMENT INSTRUCTIONS (cont)

VHF RF AND MIXER ALIGNMENT FOR TUNER #25A1148-D

Connect bias as under "VHF Oscillator Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	195MC (10MC Swp)	193.25MC 197.75MC	10	Vert. Amp. thru 10K to point Ⓒ. Low side to chassis.	A25, A26	Adjust A25 and A26 for response similar to Fig. 5 with markers on shoulders of curve.
11.	"	"	195MC (10MC Swp)	193.25MC 197.75MC	"	"	A27	Adjust for MINIMUM amplitude.
12.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 5. If markers fall below 70% on any channel, make compromise adjustment of A25 and A26 with channel switch set to that channel. Check all other channels to see that they have not been seriously affected.
			207MC (10MC Swp)	205.25MC 209.75MC	12			
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

VHF RF AND MIXER ALIGNMENT FOR TUNERS #25A1145 AND 25A1143

Connect bias as under "VHF Oscillator Alignment".
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Use only enough sweep generator output to provide usable pattern on scope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω Carbon Resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC Swp)	205.25MC 209.75MC	12	Vert. Amp. thru 10K to point Ⓕ. Low side to chassis.	A28, A29, A30	Adjust for response curve similar to Fig. 5, with markers above 90%.
14.	"	"	213MC (10MC Swp)	211.25MC 215.75MC	13	"		Check for response similar to Fig. 5. If markers fall below 70% on any channel, make compromise adjustments of A28, A29, and A30 with channel switch set to that channel. Check all other channels to see that they have not been seriously affected.
			201MC (10MC Swp)	199.25MC 203.75MC	11			
			195MC (10MC Swp)	193.25MC 197.75MC	10			
			189MC (10MC Swp)	187.25MC 191.75MC	9			
			183MC (10MC Swp)	181.25MC 185.75MC	8			
			177MC (10MC Swp)	175.25MC 179.75MC	7			
			85MC (10MC Swp)	83.25MC 87.75MC	6			
			79MC (10MC Swp)	77.25MC 81.75MC	5			
			69MC (10MC Swp)	67.25MC 71.75MC	4			
			63MC (10MC Swp)	61.25MC 65.75MC	3			
			57MC (10MC Swp)	55.25MC 59.75MC	2			

UHF TUNER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

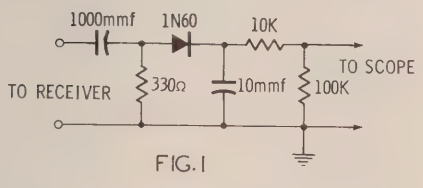


FIG. 1

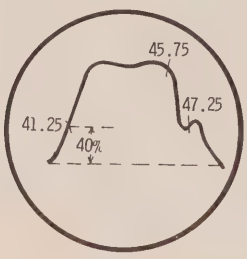


FIG. 2

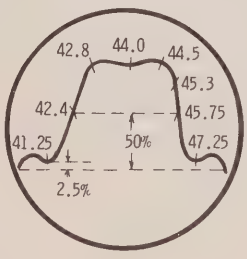


FIG. 3

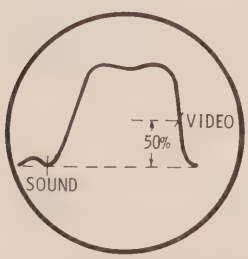


FIG. 4

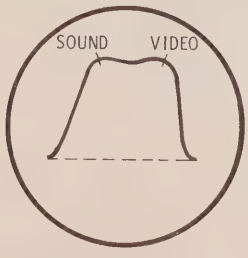
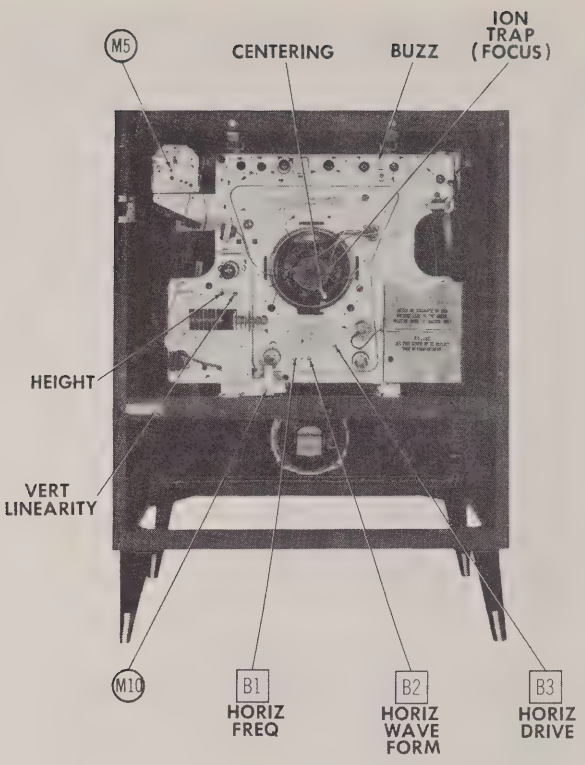


FIG. 5



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably with a test pattern.
Turn the horizontal hold control to the center of its range.
Connect a short clip lead across the horizontal waveform coil (L15).
Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.
Remove the clip lead from L15. Connect the vertical amplifier of the scope thru a low capacity probe to point (F). Low side to chassis.
Adjust the horizontal waveform slug (B2) for equal peaks of round and sharp peaks of waveform as in Fig. 6. While making this adjustment, keep the picture in sync with the horizontal hold control and B1.
Adjust the horizontal drive trimmer (B3) clockwise as far as possible without the presence of vertical white lines or compression near the center of the picture.

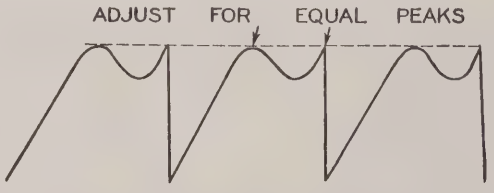
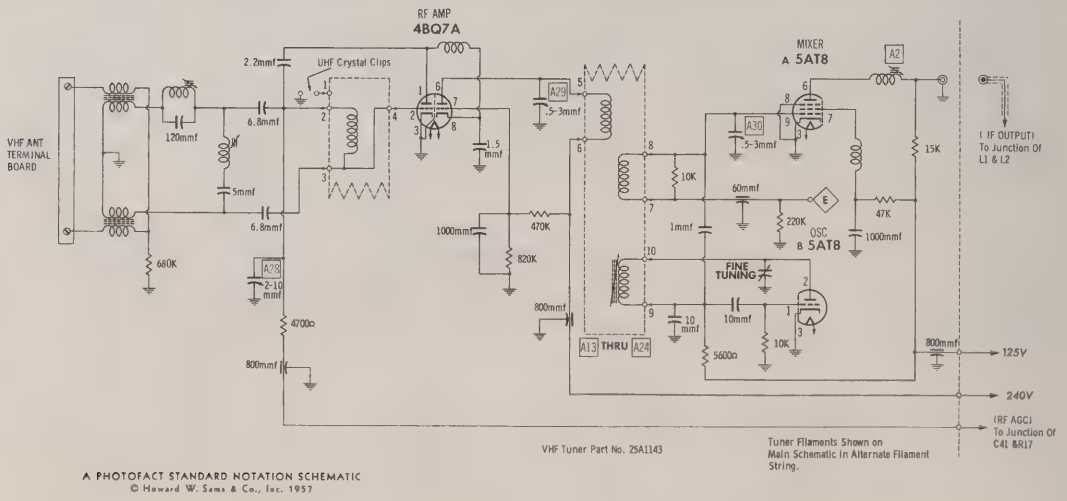


FIG. 6


RF AMP 4BQ7A
MIXER A 5AT8
OSC B 5AT8
UHF Crystal Clips
VHF ANT TERMINAL BOARD
FINE TUNING
A13 THRU A24
125V
240V
(IF OUTPUT) To Junction Of L1 & L2
(RF AGC) To Junction Of C41 & R17
VHF Tuner Part No. 25A1143
Tuner Filaments Shown on Main Schematic In Alternate Filament String.

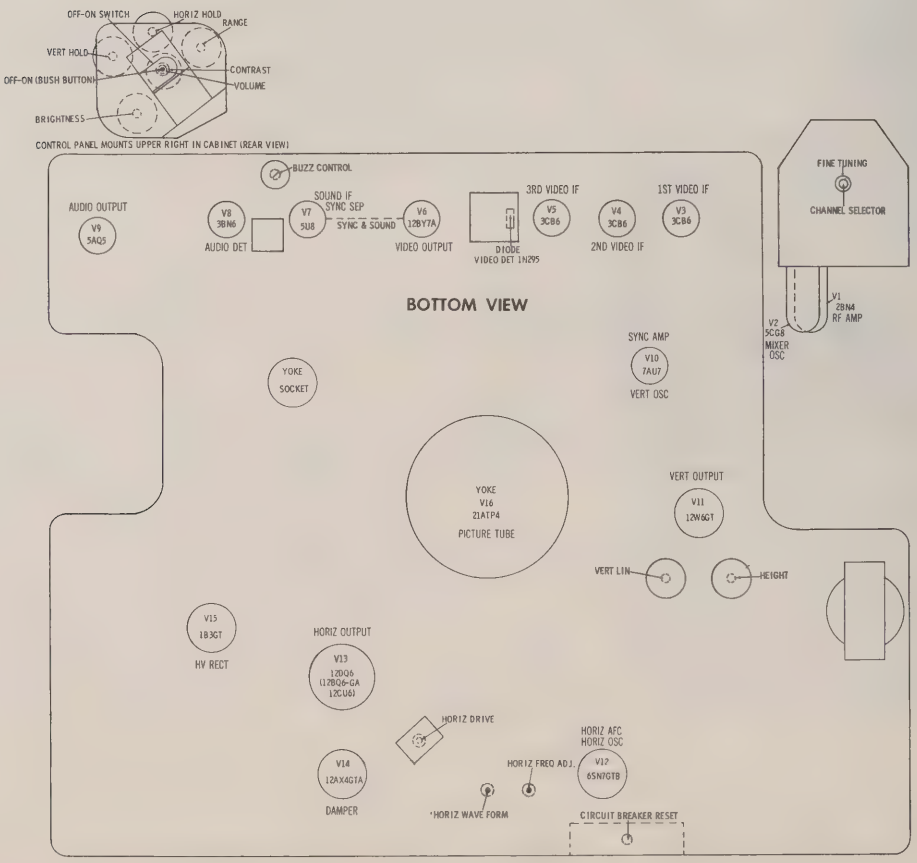
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1957

ALTERNATE TUNER SCHEMATIC

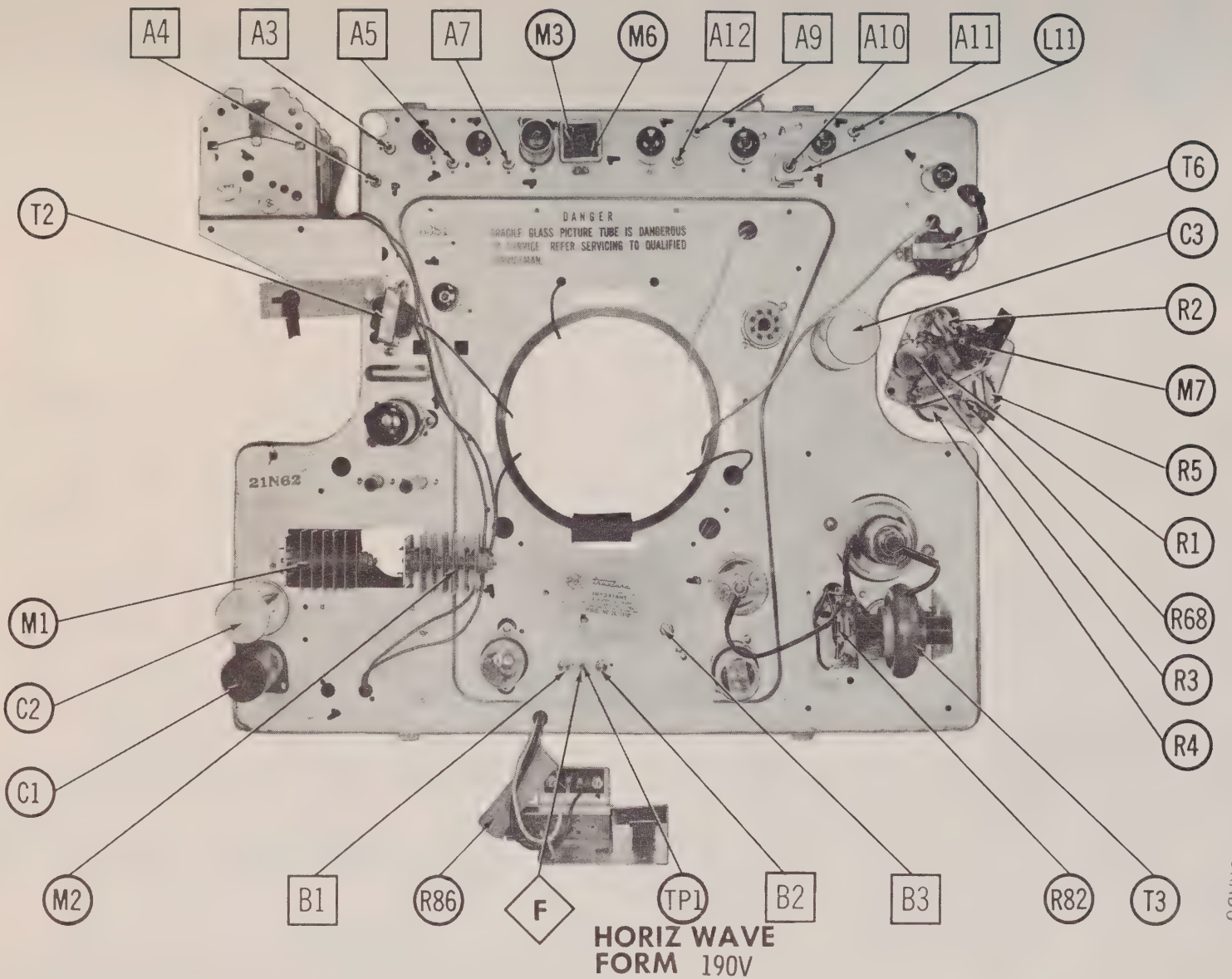
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	2BN4	0Ω	2Meg	1.5Ω	1Ω	† 2700Ω	0Ω	1Meg		
V2	5CG8	10K	† 8500Ω	0Ω	0Ω	1Ω	† 2700Ω	† 12K	0Ω	220K
V3	3CB6	1Meg	47Ω	5Ω	6Ω	† 5500Ω	† 5500Ω	0Ω		
V4	3CB6	1Meg	47Ω	6Ω	7Ω	† 5500Ω	† 5500Ω	0Ω		
V5	3CB6	.1Ω	180Ω	7Ω	8.5Ω	† 2200Ω	† 2200Ω	0Ω		
V6	12BY7A	• 300Ω	1Meg	0Ω	13Ω	13Ω	14Ω	† 3700Ω	† 1700Ω	0Ω
V7	5U8	† 820K	100K	† 150K	8.5Ω	10Ω	† 82K	0Ω	0Ω	2.2Meg
V8	3BN6	• 450Ω	3.4Ω	4.5Ω	5Ω	† 6500Ω	6Ω	† 330K		
V9	5AQ5	55Ω	330Ω	13Ω	10Ω	† 950Ω	† 500Ω	55Ω		
V10	7AU7	ǂ • 2.3Meg	• 1.1Meg	22K	14Ω	14Ω	† 13K	38K	0Ω	15Ω
V11	12W6GT	TP	17Ω	† 400Ω	† 400Ω	2.2Meg	TP	15Ω	• 1000Ω	
V12	6SN7GTB	400K	† 56K	0Ω	1.5Meg	• † 55K	400K	3Ω	4.5Ω	
V13	12DQ6	NC	20Ω	TP	† 10K	470K	TP	17Ω	100Ω	TOP CAP ǂ 10Ω
V14	12AX4GTA	TP	NC	¶	NC	† 40Ω	NC	20Ω	22Ω	
V15	1B3GT	PINS		1 THRU 8	HAVE	INFINITE	RESISTANCE			TOP CAP ǂ 305Ω
V16	21ATP4	1.5Ω	23K	PIN 6 † 100K	PIN 10 ǂ 470K	PIN 11 170K	PIN 12 3Ω			

† MEASURED FROM OUTPUT OF M 2.
ǂ MEASURED FROM PIN 3 OF V14.
• THIS READING WILL VARY, CONTROL SET FOR NORMAL OPERATION.
¶ THIS READING CAN VARY GREATLY, (10K MINIMUM), DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
TP TIE POINT
NC NO CONNECTION



TUBE PLACEMENT CHART



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

CHASSIS TOP VIEW

TRUETONE MODELS 2D1730A, B, C, 2D1731A, 2D1732A

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	RF Amplifier	2N34	
V2	Mixer-Oscillator	2N30	
V3	1st Video IF Amp	2N36	
V4	2nd Video IF Amp	2N36	
V5	3rd Video IF Amp	2N36	
V6	Video Output	1B3GTA	
V7	Sound IF - Sync Sep.	6U8	
V8	Audio Det	2N30	

ITEM No.	USE	TYPE	NOTES
V9	Audio Output	5AQ5	
V10	Sync Amp.-Vert. Osc.	7AU7	
V11	Vert Output	2W50T	
V12	Horiz AFC-Horiz. Osc	6SN7GTB	
V13	Horiz Output	12D0A	Note 1
V14	Damper	2A3/6.7A	
V15	HV Rectifier	1B3GT	

Note 1 Some versions may use a 12CU5 or 12BQ6GA in this application

PICTURE TUBE

ITEM No.	REPLACEMENT DATA		NOTES
	TRUETONE PART No.	GENERAL ELECTRIC PART No.	SYLVANIA PART No.
V16	21ATP4	21ATP4/ 21ATP4A ②	21ATP4/ 21ATP4A ② ① Aluminized ② Silver screen

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA TRUETONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No	PYRAMID PART No	SANGAMO PART No.	SPRAGUE PART No.	NOTES
C1	4.5	450	45X421	AFH31-45	AA038J	FP317	TMS 24	MT 15-50	TVL-1426	
C2A	40	150	45X431	AFH4-0280	DD046	FP318	TMF 26		R2376 *	
B	40	150				FP318				
C2B	40	150	45X430	AFH3-90-R2	DD040	FP375			TVA-2574 ⑥	
C	40	150			UBR505	LTC80				
C3	4.5	450	45X418	PR350V5	BBR5-50	TC30	TD-5-50	MT-0504	TVA-1303	

* Non-catalog item.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP	VOLT	REPLACEMENT DATA TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No	SPRAGUE PART No.	NOTES
C5	130			BPD-00013	DD-131	L10T13	ED-130	UC-5313	SGA-T13	
C6	30									
C7	18									
C8	15			EF-001	MPT-1000			532-B	503C-D1	
C9	1000				EPR-5					
C10	1-4.5									N900
C11	5.0									
C12	1.5- 4.8			532-B	532-B					
C13	47									
C14	1-4.5			532-B	532-B					
C15	47									
C16	50			EF-001	MPT-1000			503C-D1		
C17	1000									
C18	9.5									
C19	6.5			EF-001	MPT-1000			503C-D1		
C20	1000									
C21	1000			EF-001	MPT-1000			503C-D1		
C22	1000			EF-001	MPT-1000			503C-D1		
C23	47		47X803	S1 47	LT5Q47	ED-47	UC-5447	SGA-047		
C24	47		47X503	S1 47	D5-470	LT5Q47	ED-47	UC-5447	SGA-047	
C25	680		80X5	BPD-00068	DD-681	L10T68	ED-680	UC-5368	SGA-T68	
C26	56			NPO-01 56	TCZ-56	CDQ56C	TCO-56			NP0
C27	680		80X5	BPD-00068	DD-681	LJQT68	ED-680	UC-5368	SGA-T68	
C28	68			NPO-01 68	TCZ-68	CDQ68C	TCO-68			NP0
C29	680		80X15	BPD-00068	DD-681	LJQT68	ED-680	UC-5368	SGA-T68	Note 1
C30	470		80X4	BPD-00047	DD-471	BYAUT47	ED-470	UC-5347	SGA-T47	
C31	680		80X1	BPD-00068	DD-681	LJQT68	ED-680	UC-5368	SGA-T68	Note 2
C32	.047	300	RCP10M473M	BPD-05	DF-503	CUB324T		GEM-4147	ZTM-547	
C33	30		47X569							N33
C34	3000		80X1	BPD-001	DD-302	BYAED1	ED-1000	DC531	SHK-D1	
C35	47		47X503	S1 47	D5-470	LT5Q47	ED-47	UC-5447	SGA-047	
C36	.1	600	RCP10M104M	P488M-1	DF-504	CUB42U		GEM-601	ZTM-P1	
C37	.047	200	RCP10M473M	BPD-05	DF-503	CUB247		GEM-2147	ZTM-547	
C38	.47	300	RCP10M474M	P288M-47		CUB12F4		GEM-2047	ZTM-P47	
C39	1000		80X1	BPD-001	DD-102	BYAED1	ED-1000	DC531	SHK-D1	
C40	1000		80X1	BPD-001	DD-102	BYAED1	ED-1000	DC531	SHK-D1	
C41	1000		47X595	BPD-01	DD-103	BYAE01	ED-01	DC511	SHK-S1	
C42	1.5		47X594	MPO-01.5	TCZ-15S		TCO-1.5	XT-4515	XTCCB-V15	
C43	33		47X571							N470
C44	100		80X19							N150
C45	1000		80X1	BPD-001	DD-102	BYAED1	ED-1000	DC531	SHK-D1	
C46	1000		80X1	BPD-001	DD-102	BYAED1	ED-1000	DC531	SHK-D1	
C47A	1000		80X3	BPD-32001	DD2-102	BYCED01	ED8-001	DC5031	SHK-D31	
B	1000									
C48	15		47X573							N330
C49	1000		80X1	BPD-001	DD-102	BYAED1	ED-1000	DC531	SHK-D1	
C50	5000		47X507	BPD-006	DD-502	BYAU05	ED-005	DC535	SHK-D5	
C51	.047	600	RCP10M4647M	BPD-047	DF-504	CUB4D47	ED-047	GEM-6247	ZTM-D47	
C52	330		47X570		1464-00033				M5-333	
C53	5000		47X507	BPD-006	DD-502	BYAU05	ED-005	DC535	SHK-D5	
C54	.047	600	RCP10M4473M	BPD-05	DF-503	CUB4247		GEM-4147	ZTM-547	
C55	.01	600	RCP10M4103M	BPD-01	DF-103	CUB4E1	GP-10000	GEM-4101	ZTM-E1	
C56	.047	600	RCP10M4473M	BPD-05	DF-503	CUB4E47		GEM-4147	ZTM-E47	
C57	.022	300	RCP10M2233M	BPD-03	DF-303	CUB3E22		GEM-3221	ZTM-322	
C58	.1	400	RCP10M4104M	P488M-1	DF-104	CUB4J1		GEM-401	ZTM-P1	
C59	.047	800	RCP10M4473M	BPD-05	DF-503	CUB4E47		GEM-6147	ZTM-647	
C60	18		RCM20B180K	1464-00061		1R5G18			M5-416	
C61	82		RCM20B820K	1464-00064		1R5Q82			M5-482	
C62	100		RCM20B101K	1464-00065		1R5T1		MC238	M5-491	
C63	.047	600	RCP10M4473M	BPD-05	DF-503	CUB4E47		GEM-4147	ZTM-647	
C64	.047	200	RCP10M2473M	BPD-05	DF-503	CUB247		GEM-2147	ZTM-547	
C65	.022	300	RCP10M3223M	BPD-03	DF-303	CUB3E22	ED-02	GEM-3222	ZTM-322	
C66	.47	300	RCP10M474M	P288M-47		CUB12F47		GEM-2047	ZTM-P47	
C67	18		RCM20B180K	1464-00028		1R5T18			M5-318	
C68	01	600	RCP10M4103M	BPD-01	DF-103	CUB4E1	ED-01	GEM-4101	ZTM-E1	
C69	820		RCM20B821K	1464-00083		1R5T82			M5-382	
C70	170- 200		17A27							
C71	3000		80X1	BPD-001	DD-102	BYAED1	ED-1000	DC531	SHK-D1	
C72	.047	600	RCP10M4473M	BPD-05	DF-503	CUB4E47		GEM-6147	ZTM-647	
C73	5000		47X755		DD60-502					
C74	.047	600	RCP10M4473M	BPD-05	DF-503	CUB4E47		GEM-6147	ZTM-647	
C75	10000		47X915	BPD-01	DD-103	BYAE01	ED-01	DC511	SHK-S1	

PARTS LIST AND DESCRIPTIONS

CAPACITORS (cont)

ITEM No.	RATING CAP.	VOLT	REPLACEMENT DATA TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	MALLORY PART No	SPRAGUE PART No.	NOTES
CTRA	1000		80X3	BPD-32001	DD8-102	BYCED01	ED3-001	DCD531	SHK-D31	
B	1000									

Note 1 Some versions use a 550MMF in this application.
Note 2. Some versions use a 1000MMF in this application.

CONTROLS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA CENTRALAB PART No	CLAROSTAT PART No.	IRC PART No	MALLORY PART No	INSTALLATION NOTES
R1A	1MEG		75X25				Contrast
B	1Meg						Volume
R2A	500K	½	40X405	A2-50	A47-500K-B	U50	Brightness
B	Shaft			AK-8	R2-5/8	D8-57	
R3A	1: 5Meg	½	40X415	A2-742	A47-1.5Meg-B	U155	Vert. Hold
B	Shaft			AK-8	R2-3/16	D8-57	
R4A	50K	½	40X414	A2-31	A47-50K-B	U38	Horiz. Hold
B	Shaft			AK-8	R2-3/16	D8-57	
R5	1: 5Meg	½	40X417				
R6A	2 5Meg	½	40X398	BX-83	A47-2.5Meg-B	CU-339	Height
B	Shaft			Not Req.	FX2-1/2	TQ	
R7A	150K	½	40X399	B-6	A47-150K-B	CU-109	Vert. Lin.
B	Shaft			Not Req.	FX2-1/2	TQ	
R8	500K	2	40X397		50-500		Buzz

* The resistance of this control will vary from 7 to 10 megs

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA TRUETONE PART No.	IRC PART No.	NOTES
R9	4700Ω			BTS-4700	
R10	1000Ω			BTS-1000	
R11	3900Ω			BTS-3900	
R12	220K			BTS-220K	
R13	1000Ω			BTS-1000	
R14	6800Ω			BTS-6800	
R15	10K			BTS-10K	
R16	10K			BTS-10K	
R17	2.2Meg		B84525		
R18	5600Ω		B84562		
R19	470Ω		B84471	BTS-470	
R20	5000Ω	4	43X333	PW4-5000	
R21	47Ω 9%		B84740	BTS-47 9%	
R22	68K		B84683		
R23	1000Ω		B85103	BTS-1000	
R24	470Ω		B85471	BTS-470	
R25	47Ω 9%		B83470	BTS-47 9%	
R26	47K		B84473		
R27	22K		B84323	BTS-22K	
R28	470Ω		B85471	BTS-470	
R29	180Ω		B84181	BTS-180	
R30	1Meg		B84105	BTS-1Meg	
R31	3900Ω		B84392	BTS-3900	
R32	1Meg		B84105	BTS-1Meg	
R33	22K		B84223	BTS-22K	
R34	3600Ω	4	43X351		
R35	470		B84470	BTS-47	
R36	100K		B85104	BTS-100K	
R37	180K		B84184	BTS-180K	
R38	1.5Meg		B84155	BTS-1.5Meg	
R39	100K		B84104	BTS-100K	
R40	56K		B84563	BTS-56K	
R41	82K		B84823	BTS-82K	
R42	680Ω		B84681	BTS-680	
R43	330K		B84334	BTS-330K	
R44	4700Ω		B84472		
R45	470Ω	1	C84471	BTA-470	
R46	330Ω	1	C84331	BTA-330	
R47	180K		B84184	BTS-180K	

ITEM No.	RATING OHMS	WATT	REPLACEMENT DATA TRUETONE PART No.	IRC PART No.	NOTES
R48	2.2Meg		B84225	BTS-2.2Meg	
R49	330K		B84334	BTS-330K	
R50	680K		B84684	BTS-680K	
R51	47K		B84473	BTS-47K	
R52	6800Ω		B84682	BTS-6800	
R53	4700Ω		B84474	BTS-4700	
R54	680K		B84684	BTS-680K	
R55	470K		B84474	BTS-470K	
R56	22K		B84223	BTS-22K	
R57	470K		B84474	BTS-470K	
R58	2.2Meg		B84225	BTS-2.2Meg	
R59	100Ω		B84101	BTS-100	
R60	8200Ω		B84822	BTS-8200	
R61	15K		B85153	BTS-15K	
R62	680Ω	1	C84681	BTA-680	
R63	560Ω		B84561		
R64	1650Ω		B84165		
R65	220K		B84324		
R66	330K		B84334		
R67	820K		B84824		
R68	120K		B84124		
R69	47K		B84473	BTS-47K	
R70	82K		B84823		
R71	330K		B84334		
R72	3900Ω		B84392		
R73	82K		B84823		
R74	33K		B84333		
R75	10K		B85103	BTS-10K	
R76	1Meg		B84105	BTS-1Meg	
R77	56K		B84563	BTS-56K	
R78	56Ω		B85560	BTS-56	
R79	470K		B84474	BTS-470K	
R80	10K	2	D84103	BTS-10K	
R81	100Ω	2	D84101	BTS-100	
R82	5600Ω		B84562	BTS-5600	
R83	1700Ω	10	43X394	1/2A-1750	
R84	25Ω	10	43X390	PW10-25	
R85	20Ω		43X338		
R86	5.5Ω	10	43X293		

TRANSFORMER (MISC.)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117VAC	6.3V @ 0A	2.5V @ 2A		54X17 ①	F55U ②③	P-2944 ③	P-6134 ③	21F08 ③④	F-13X ③

① 54X06 alternate part number.
② Drill one new mounting hole.
③ Tape center tap on secondary winding.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA TRUETONE PART No.	Halldorson PART No.	Merit PART No.	RCA TYPE No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	Vert Osc	54X10	S5702	A-3003	209T1 ①	Y405	A-8125	26A03	A-97X
T3	Horiz Output	53X359A	P2419 ①	A-3023 ① *8	209A1 ① *8	209A1 ① *8	RO-382 *	FLY-1(H) ① *6	D-56 ① *6
T4	Alt. Horiz. Output	53X359							A-118X ①
	Vert. Output	51X173A	21W00 ②③	A-3023 ① *8	V30S1 ①	A-8148 ①	26S75 ②③	A-118X ①	
	Alt. Vert. Output	51X173	21W00 ②③	A-3023 ① *8	V30S1 ①	A-8148 ①	26S75 ②③	A-118X ①	
T5A	Yoke-Horiz. (24MH)	9A2387-1B	DF507 ⑤⑥	MDF-91 ⑤	235D1 ⑤⑥	Y90P19/43 ⑤⑥	DY-18A ⑤	Y-16 ⑤⑥	Y-41 & NW1 ⑤
B	(90°) Vert. (39MH) Alt. Yoke	9A2387	DF607 ⑤⑥	MDF-93 ⑤	235D1 ⑤⑥	Y90P18/43 ⑤⑥	DY-16A ⑤	Y-16 ⑤⑥	Y-41 & NW1 ⑤
M8	Yoke Rear Cover & Centering Device Yoke Clamp	2A435 3026U1							YC1 CL1

① Drill new mounting hole(s).
② Use 8 to 1 turns ratio.
③ Connect as auto transformer.
④ Cut and tape green lead.
⑤ Mount with leads out top and connect same as original using original horizontal damping network.
⑥ Use original rear cover and centering device.
† This part may be superceded by Parts Manufacturer's introduction of special unit for this application.

TRANSFORMER (HORIZ . OSC.)

ITEM No.	DC RES.		REPLACEMENT DATA TRUETONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	RCA TYPE No.	Ram PART No.	Thordarson PART No.	NOTES
	PRI.	SEC.								
L24	75Ω		9A2371						RS-7 *	Tapped ② 25Ω, 13.4 to 48.5 Millihenries Horiz. Freq. 7.5 to 30 Millihenries Horiz. Waveform
L25	80Ω		9A2372							

* Enlarge mounting hole.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	D C RESISTANCE	INDUCTANCE (@ CURRENT 1000 ~)	REPLACEMENT DATA TRUETONE PART No	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L5	.265A	40Ω	7 HY.	58X95-2	C5087 ①	C-3996 ①	C-3328 ①	28C44 ①	C-27X

① Drill one new mounting hole.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	TRUETONE PART No.	REPLACEMENT DATA
K1	Ant. Input	470MMF, 3-1Meg	76X1	Centralab RC-471
K2	Ant. Input	470MMF, 3-1Meg	76X11	Centralab RC-471
K3	Chassis Isolation	470MMF, 3-1Meg	76X21	Centralab RC-471
K4	Vert. Integrator	2000MMF, 5000MMF, 5000MMF, 22K, 82000, 82000	76X7	Aerovox PAL10 Centralab PC-100 Cornell Dubilier 1187M1 Erie 408-1 Sprague V-1

RECTIFIERS

ITEM No.	RATING CURRENT (Measured)	TRUETONE PART No.	FEDERAL PART No.	REPLACEMENT DATA GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	MALLORY PART No.	SARKES TARZIAN PART No.	NOTES
M1	.265A	56X16 ①	1090A ①	1N1007 ②	RS3008L ①	65100A ①	300 ①	
M2	.385A	56X18 ①	1090A ①	1N1007 ②	RS3008L ①	65200A ①	300 ①	

① Selenium type. ② Germanium type.

* HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	RCA Replacement Connections	Ram Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
8	9	9	9	9	8	9	9
3	7 or 5	7 or 5	7 or 5	7 or 5	3	7 or 5	7 or 5
2	See Note ① NC	See Note ① NC	See Note ① NC	See Note ① NC	2	See Note ① NC	See Note ① NC
1	1	1	1	1	1	1	1
Special Notes	7	7	7	7		7	7

① Install new damping network, consisting of approx. 100MMF ② 2KV and 1000Ω ③ 1 watt, across horizontal yoke terminals #3 and #7.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	SEC.	REPLACEMENT DATA TRUETONE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T6	6300Ω	6-8Ω	51X180	Z1000 ①	A-2900 ①	A-3357	34S80 ①	S-81X ①	① Drill one new mounting hole. Tape center tap on primary winding.

SPEAKER

ITEM No.	TYPE SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA TRUETONE PART No.	QUAM PART No.	NOTES
SP1	6"	PM	8-8Ω	12A338	6A1527	† Alternate part number
	8"	PM	8-8Ω	12A340 ①	8A1526.4	

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA TRUETONE PART No.	MEISSNER PART No.	MERIT PART No.	MILLER PART No.	NOTES
L1	IF Coupling Coil	9A2360				82Ω
L3	1st. Video IF	9A2365		TV-181		82Ω
L5	2nd. Video IF	9A2363				82Ω
L4	3rd. Video IF	9A2364				82Ω
L6	Tweet Choke	9A2375				30 Microhenries
L6	Shunt Peaking Coil	28A13				180 Microhenries, wound on 22K resistor
L7	4.5MC Trap	9A2366	20-1004	TV-181		146Ω
L8	Series Peaking Coil	28A33		TV-190 ②	6132 ②	350 Microhenries, wound on 6800Ω resistor
L9	Shunt Peaking Coil	28A33	19-3250 ②	TV-185 ②	6181 ②	325 Microhenries, wound on 2200Ω resistor
L10	1st. Sound IF	9A2366	20-1004	TV-181		146Ω
L11	2nd. Sound IF	9A2368	17-3495	TV-113		6203
L12	Quadrature Coil	9A2367	20-1005	TV-131		1480
L13	RF Choke	9A2380	18-1001			4604

1. Micromicrofarads

* Parallel with 22K resistor.
▲ Parallel with 6800Ω resistor.
● Parallel with 2200Ω resistor.

PARTS LIST AND DESCRIPTIONS (Continued)

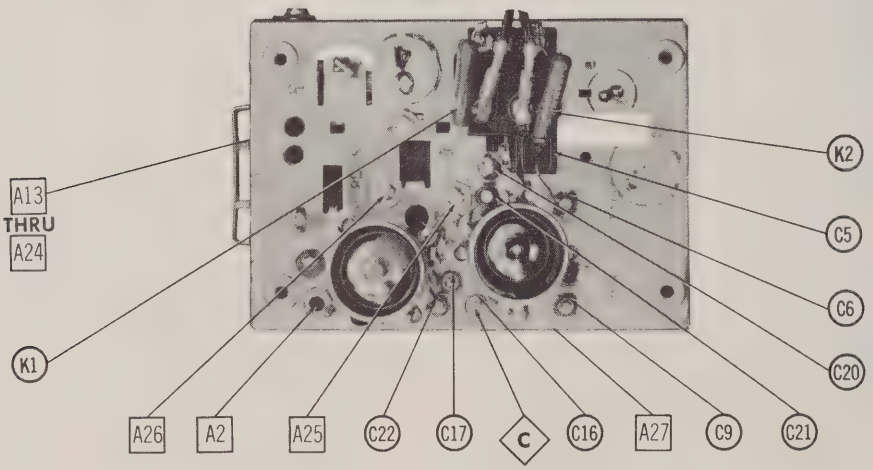
CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		TRUETONE PART No.	CBS PART No.	SYLVANIA PART No.	
M3	1N295 *		1N60	1N60	Video Det. (Pigtail)

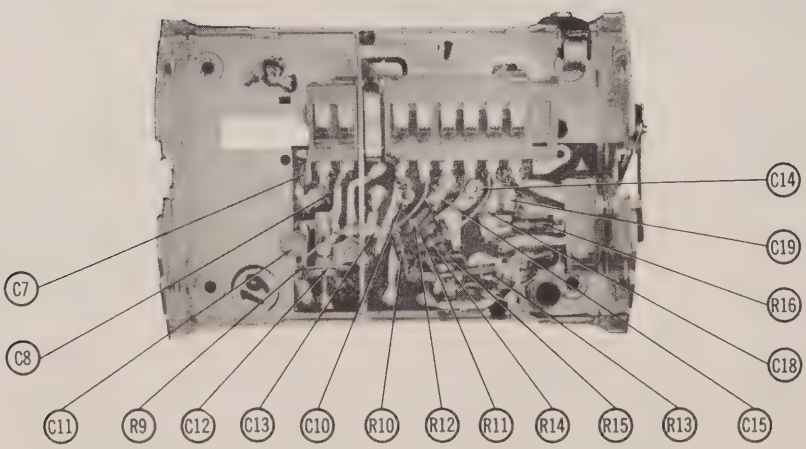
* A CK706 or 1N60 may be used in this application.

MISCELLANEOUS

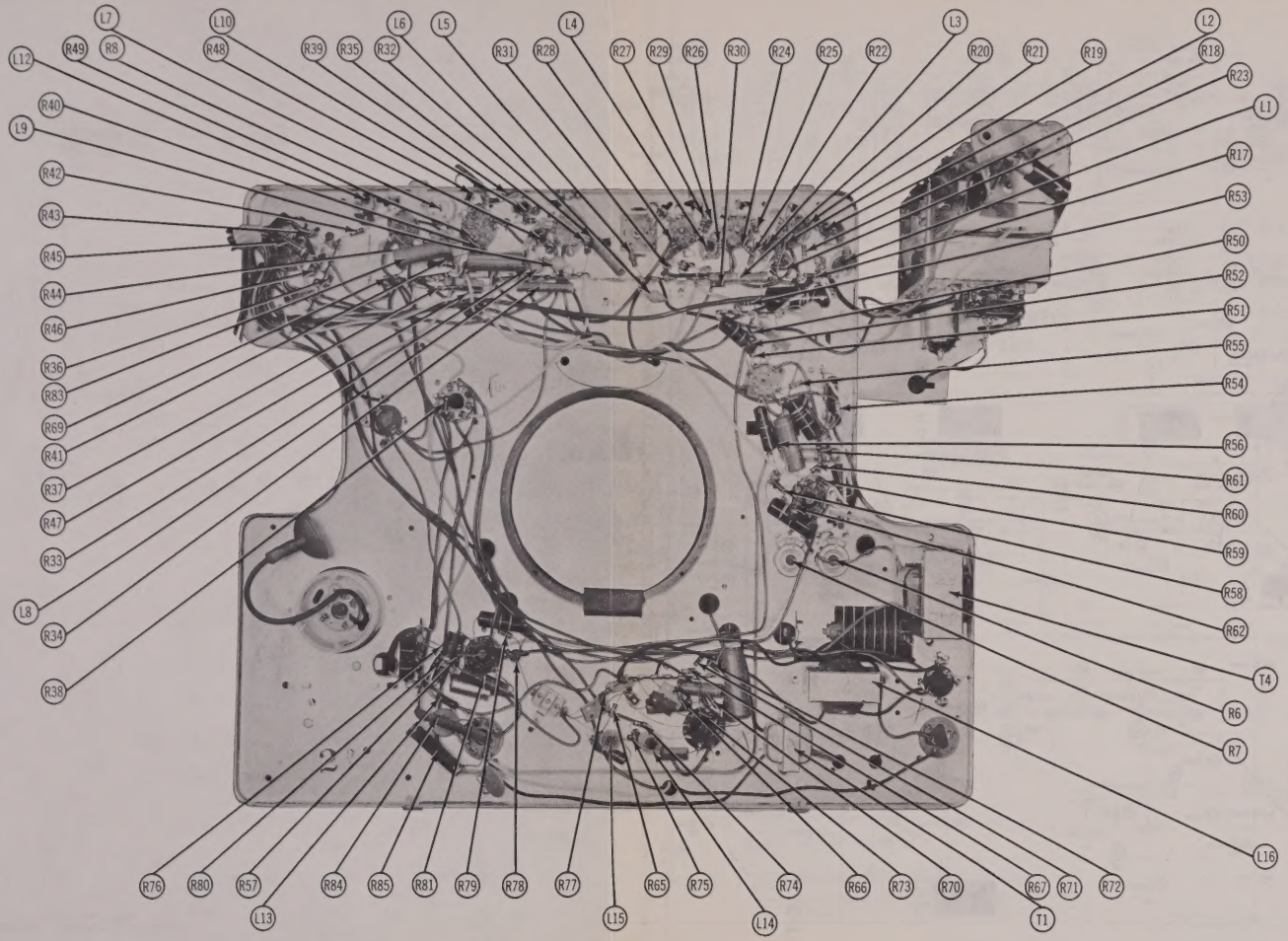
ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M4	Dial Light		#51 Type (A type #15 may be used in some versions)
M5	Tuner	25A1148-D	VHF
	Tuner	25A1145	UHF-VHF
	Tuner	25A1143	VHF
M6	Video Det. Assy.	9A2370	Includes 4th. Video IF, peaking coil, caps., M3
M7	Switch	2A464	On-off (Push type)
M8	Centering Device	2A435	Includes rear yoke cover
M9	Ion Trap	2A421	
M10	Circuit Breaker	2A461	
	Safety Glass	17X193-1	Tinted
	Knob	10A861-1	Control (4 used)
	Knob	10A870-11	Channel Selector (VHF, Mahogany Cabinet)
	Knob	10A871-1	Fine Tuning (VHF, Mahogany Cabinet)
	Knob	10A872-1	Volume (VHF, Mahogany Cabinet)
	Knob	10A873-1	Contrast (VHF, Mahogany Cabinet)
	Knob	10A870-12	Channel Selector (VHF, Oak Cabinet)
	Knob	10A871-2	Fine Tuning (VHF, Oak Cabinet)
	Knob	10A872-2	Volume (VHF, Oak Cabinet)
	Knob	10A873-2	Contrast (VHF, Oak Cabinet)
	Knob	10A875-1	VHF Channel Selector (UHF, Mahogany Cabinet)
	Knob	10A876	UHF Channel Selector (UHF, Mahogany Cabinet)
	Knob	10A877-1	Fine Tuning (UHF, Mahogany Cabinet)
	Knob	10A874-1	Volume (UHF, Mahogany Cabinet)
	Knob	10A878	Contrast (UHF, Mahogany Cabinet)
	Knob	10A875-2	VHF Channel Selector (UHF, Oak Cabinet)
	Knob	10A876	UHF Channel Selector (UHF, Oak Cabinet)
	Knob	10A877-1	Fine Tuning (UHF, Oak Cabinet)
	Knob	10A874-2	Volume (UHF, Oak Cabinet)
	Knob	10A878	Contrast (UHF, Oak Cabinet)



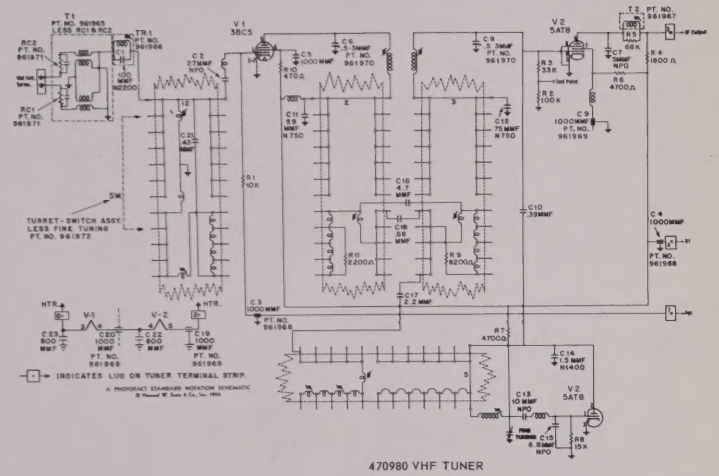
RF TUNER TOP VIEW



RF TUNER BOTTOM VIEW

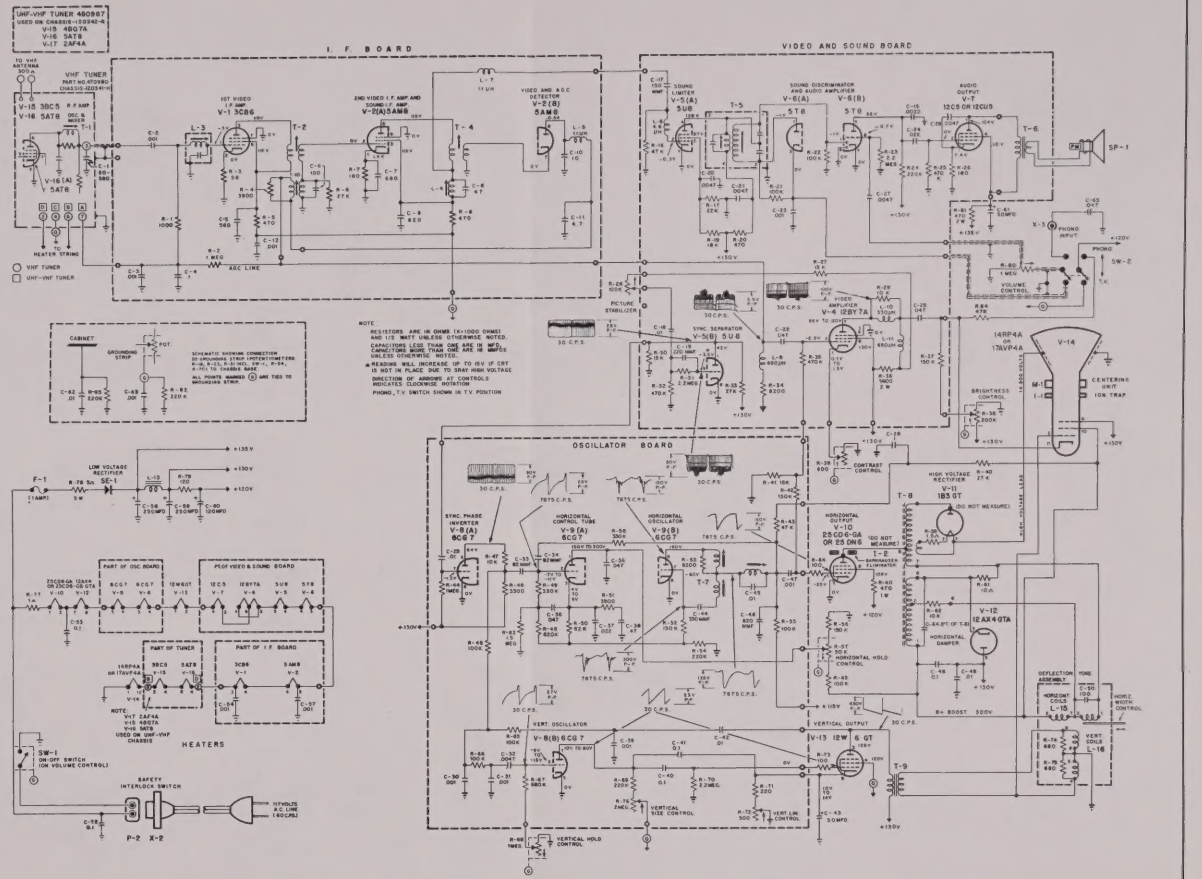


CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



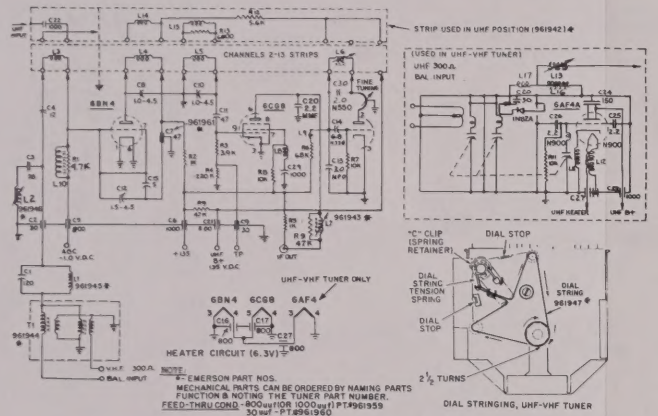
470980 VHF TUNER

EMERSON MODELS	CHASSIS
1254	120341-H
1255	120342-R
1264	120341-H
1265	1204
1265	120342-R



SCHEMATIC COURTESY OF EMERSON RADIO & PHONOGRAPH CORP.

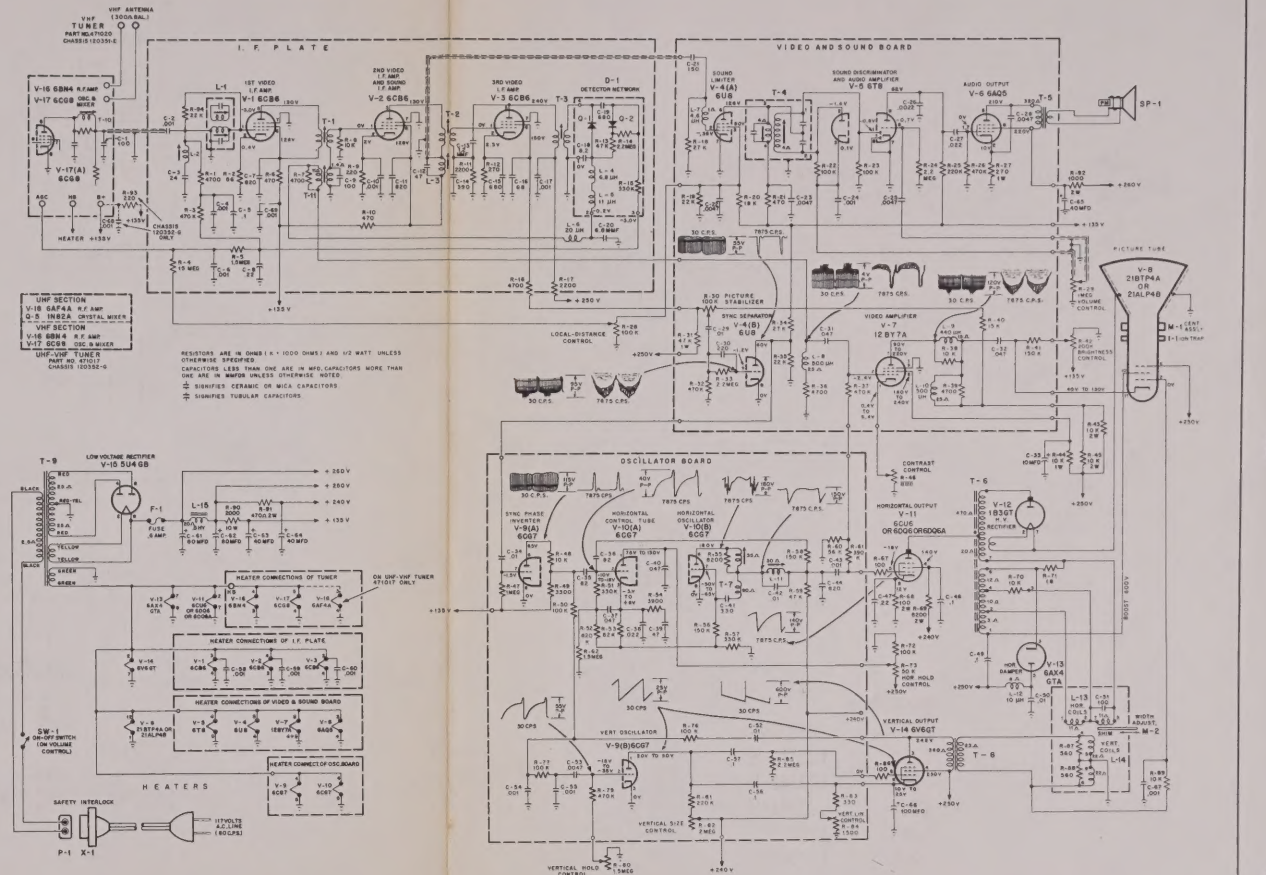
EMERSON


STRIP USED IN UHF POSITION (9619421)*
CHANNELS 2-13 STRIPS
(USED IN UHF-VHF TUNER)
UHF 300Ω BAL. INPUT
UHF-VHF TUNER ONLY
6BN4 6CG8 6AF4
HEATER CIRCUIT (6.3V)
"C" CLIP (SPRING RETAINER)
DIAL STOP
DIAL STRING TENSION SPRING
DIAL STRING 961947*
2½ TURNS
DIAL STRINGING, UHF-VHF TUNER
NOTE
* - EMERSON PART NOS.
MECHANICAL PARTS CAN BE ORDERED BY NAMING PARTS FUNCTION & NOTING THE TUNER PART NUMBER.
FEED-THRU COND - 800 μμf (OR 1000 μμf) PT961959
30 μμf - PT961960

UHF-VHF No. 471017 TUNER, VHF TUNER No. 471020

EMERSON MODELS	CHASSIS
1212	120351-E
1213	120352-G
1228	120351-E
1229	120352-G
1238	120351-E
1239	120352-G
1244	120351-E
1245	120352-G
1246	120351-E
1247	120352-G
1272	120351-E
1273	120352-G
1274	120351-E
1275	120352-G

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO


I. F. PLATE
VIDEO AND SOUND BOARD
OSCILLATOR BOARD
VHF TUNER
UHF SECTION
VHF SECTION
UHF-VHF TUNER
LOW VOLTAGE RECTIFIER V-15 5U4 GB
HEATER CONNECTIONS OF TUNER
HEATER CONNECTIONS OF I.F. PLATE
HEATER CONNECTIONS OF VIDEO & SOUND BOARD
HEATER CONNECTS OF OSC. BOARD
HEATERS
SAFETY INTERLOCK
117 VOLTS A.C. LINE (60 CPS)
PICTURE TUBE
SP-1
RESISTORS ARE IN OHMS (K = 1000 OHMS) AND 1/2 WATT UNLESS OTHERWISE SPECIFIED
CAPACITORS LESS THAN ONE ARE IN MFD. CAPACITORS MORE THAN ONE ARE IN MMFD UNLESS OTHERWISE NOTED
SIGNIFIES CERAMIC OR MICA CAPACITORS
SIGNIFIES TUBULAR CAPACITORS

SCHEMATIC COURTESY OF EMERSON RADIO & PHONOGRAPH CORP.

© Howard W. Sams & Co., Inc. 1957 SET 365 FOLDER 16-S